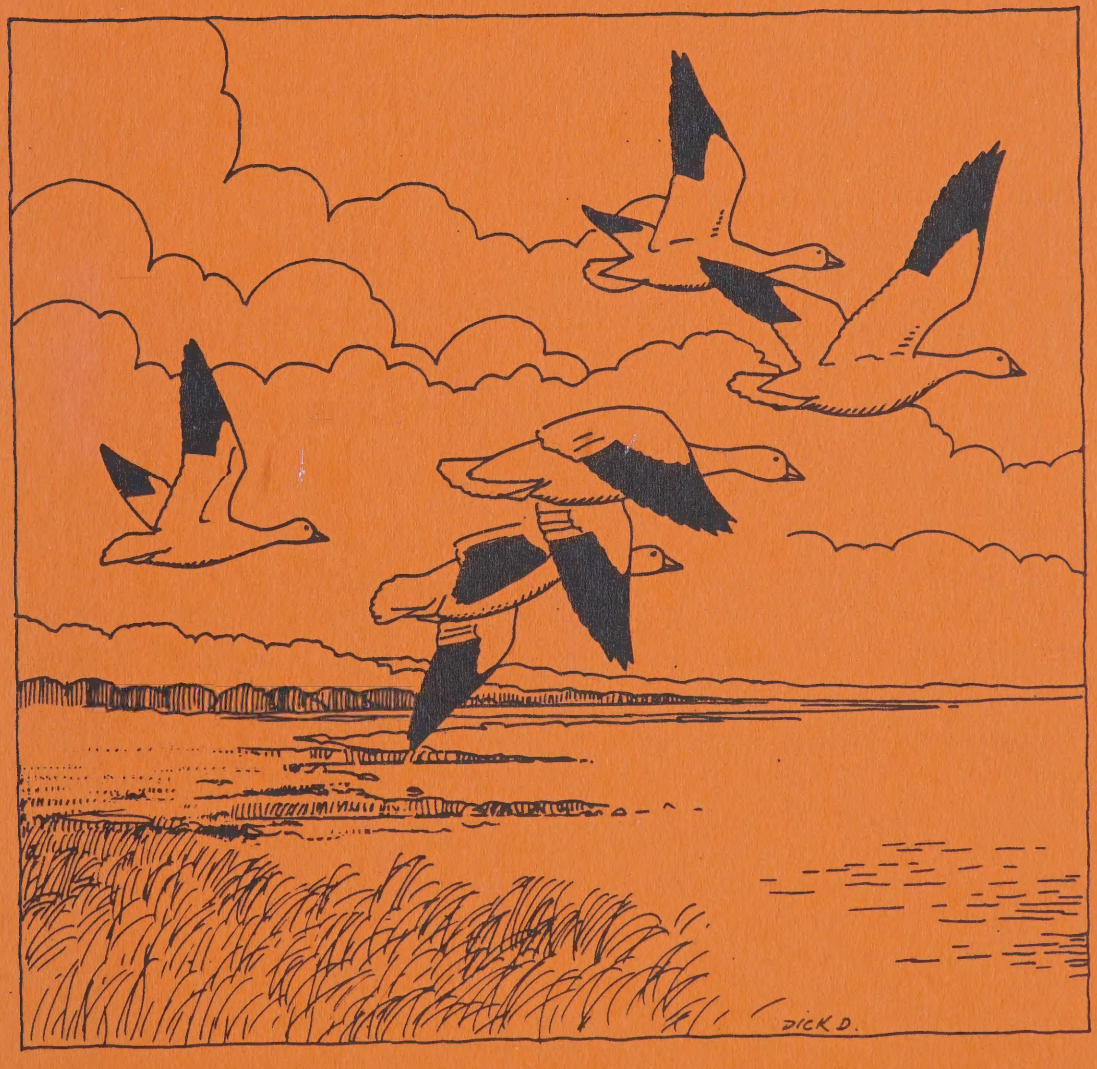
University of Alberta Library
0 1620 2115 0584

Alberta Naturalist

VOLUME 12, NUMBER 1, MARCH 1982



ALBERTA NATURALIST

VOLUME 12 NUMBER 1 MARCH 1982

The Alberta Naturalist is a publication of the Federation of Alberta Naturalists, published as four regular issues and a research supplement annually, plus occasional special issues.

TABLE OF CONTENTS

COVER: Beaverhill Lake, by Dick Dekker

COVER STORY: AN INTRODUCTION TO BEAVERHILL LAKE, by Dick Dekker 1

GRASSHOPPER SPARROWS IN ROCKY MOUNTAIN PASTURE, by Julie G. Zammuto, Richard M. Zammuto and James O. Schieck 5

SEMIPALMATED PLOVER BREEDING IN ALBERTA, by E. Kuyt. 6

PROFILES ON ORGANIZATIONS WHOSE ACTIVITIES OVERLAP THOSE OF FAN: 6 THE SIERRA CLUB OF WESTERN CANADA ALBERTA GROUP, by Pat Karril. 9

ANIMAL EXCHANGES WITH CHINA, by Dr. A.F. "Al" Oeming 10

RANGE EXCLOSURES IN THE WESTERN REGION NATIONAL PARKS, by G.C. Trottier. 12

RECENT PUBLICATIONS ON THE NATURAL HISTORY OF ALBERTA, compiled by David M. Ealey and Martin K. McNicholl. 15

A BIRDER'S GUIDE TO BANFF NATIONAL PARK, by Geoffrey L. Holroyd and Kevin J. Van Tighem 18

NATURALISTS' BOOKSHELF

VASCULAR PLANTS OF THE CONTINENTAL NORTHWEST TERRITORIES, CANADA, by A.E. Porsild and W.J. Cody, Reviewed by J. Derek Johnson. 25

FROM ARSENIC TO DDT: A HISTORY OF ENTOMOLOGY IN WESTERN CANADA, by Paul W. Riegert, Reviewed by H.G. Philip. 26

OCTOPUS BIG BOOK OF NATURE, by John Rostron, Mark Lambert and Keith Lye, Reviewed by Virginia Young 27

NEW AND RECENT RELEASES OF INTEREST TO ALBERTA NATURALISTS. 28

FAN NEWS: FAN Annual General Meeting, Camp Caroline; Committee Report: Wilderness, Parks and Natural Areas; FAN May Meeting - May 22-24; FAN Summer Field Outing; Robert Lister Named Honorary Member of FAN; Alberta Ornithological Records Committee. 29

CLUB NEWS. 33

CONSERVATION NEWS: A National Wildlife Policy for Canada: Notes from the Federal/Provincial Wildlife Conference, June 23-26, 1981. 35

CANADIAN NATURE FEDERATION NEWS: CANADIAN NATURE FEDERATION CONFERENCE, Calgary, July 2-10. 37

NOTES AND NEWS: Alberta Site Named to World Heritage List; Elk Transplant Program; Alberta Banding in 1979; Dr. Kay Ball Honoured by Edmonton Bird Club; Lois Fenna Receives Goulden Award; Ross Lein Receives Award; Environmental Monitoring Symposium. 41

JUNIOR NATURALISTS' SECTION. 43

ISSN 0318-5440, Postage paid at Edmonton, Alberta
under Second Class Mail Registration No. 3604

COVER: Snow Geese at Beaverhill Lake, by Dick Dekker

AN INTRODUCTION TO BEAVERHILL LAKE

by Dick Dekker
3819-112A Street, Edmonton, Alta.

Recently the Canadian Nature Federation has designated Beaverhill Lake as a National Nature Viewpoint in recognition of its importance to birds and birdwatchers. The lake is surrounded by public lands, yet it has no official status as a nature preserve or sanctuary. Half a dozen private organizations have a stake in the area's potential for grazing, hunting and hydrocarbon extraction. Several government agencies are involved in land use planning and habitat management. It is to be hoped that such management will be based upon a solid understanding of the lake's ecology.

As one who spends more time there than most naturalists, I appreciate the lake's solitude and I often resent the increasing number of visitors. However, the more people come to know the lake, the better our chances of good management by government and private organizations. With this goal in mind, I have written the following article, especially aimed at birdwatchers who have never been to the lake.

When you stand on Beaverhill Lake's south shore and look north, the opposite shore dips below the flat horizon. The immense panorama of water and sky is part of the attraction that the area holds for its many regular visitors. But apart from its vast size, about 16 by 12 kilometres, Beaverhill is not much of a lake; the water is so shallow that only minnows and sticklebacks can survive winter. It is, in fact, no more than a gigantic slough, a collection basin for the run-off from the higher lands to the west.

The lake has no outlet, but that has not always been the case. During the first quarter of this century, a creek flowed out of the marshes in the northeast and drained eventually into the North Saskatchewan River. During those years of high water, Beaverhill was an integral part of the vast Cooking Lake watershed. Incoming creeks, that now run spasmodically only during spring and after excessive summer rains, connected Beaverhill to Hastings, Cooking, Ministik, Miquelon, Joseph and Astotin Lakes. Fish were plentiful in those days and local oldtimers fondly remember the cartloads of netted whitefish and pike.

In the early fifties, Beaverhill's dropping water levels reached an all-time low, retreating so far that plans were made to drain the entire lake and to make the reclaimed land a community pasture. Before these plans could be realized, above-normal precipitation brought the lake up to a respectable level, although the original highs of 60 years ago have never been reached since. Record spring run-off in 1974 caused the lake to rise nearly a metre. This new level was maintained into the cool and wet summer of 1975 before the waters began to drop again.

The periodic rise of the lake and the resultant flooding of surrounding pastures and fields causes a good deal of irritation to the local land users, who have asked the Alberta Government to stabilize the water levels. Recently, the Department of the Environment has examined the possibility and found the costs

involved prohibitive. From the birdwatcher's point of view, stabilization would be a disaster. The perpetual interplay of high and low water is a key factor in creating the mudflat habitat essential for shorebirds, and in preventing Beaverhill's shores from becoming overgrown with reeds and willows.

In 1972, Ducks Unlimited financed the construction of a dam across the bay in the southeast corner of the lake for the purpose of stabilizing water levels in Lake "A". The dam was made of sand, inadequate to withstand peak outflows from Amisk Creek and wave action from the lake during northwesterly storms. The structure was seriously eroded in its first year and washed out completely during the following spring. The dam has been rebuilt since, fortified with stones, and makes a fine vantage point for birdwatchers. During low water, it provides easy access from the south to the east shore.

Access to the lake can be a problem at Beaverhill. Many points are accessible only on foot, especially during wet weather. The character of the shoreline varies; the south shore is quite straight with narrow sandy beaches; the north is muddy and deeply indented with reed-choked bays and rock-strewn points. Along the east and south, the lake is bordered by willow and poplar shrub; along the west and north the landscape is open with rough pastures and gently-sloping fields.

A strip of land around the lake, totalling about 15,000 acres, that emerged after the drop in water levels since the area was settled, is owned by the Crown and leased to local cattle ranchers. Some birdwatchers and hunters would like to have all shoreline grazing stopped because of the damage to nesting cover for waterfowl. In dry summers, when grass grows thinly, most ranges are seriously overgrazed. However, such heavy grazing is necessary to retain the openness of the pastures, as natural succession is towards woodland. Along the east and south, formerly open pastures are now overgrown with brush. In the north, this transformation began about ten years ago and is slowly changing the character of the "windmill region".

Very recently, the Department of Energy and Natural Resources has compiled an integrated land use plan for the public lands at Beaverhill Lake, which include provision for habitat management schemes such as brush removal and no-grazing zones.

While it would be a good idea to ban the bovine bulldozers from the wooded southeast and northeast shores, so as to allow the vegetation to develop naturally, all present-day grassland should be preserved, either by heavy grazing or periodic burning. It is the open surroundings and the vast mudflats that make Beaverhill different from most other lakes in north-central Alberta, and that constitutes its attraction to great flocks of migrating shorebirds and geese, for which the lake is justly famous.

Although not the first migratory birds to return, the geese are the most conspicuous harbingers of spring at Beaverhill. Their arrival date is dependent upon the progress of the season. In early years, the very first Canadas, locally breeding pairs, can be expected before the middle of March, soon after patches of soil emerge from the snow. Before long, they will be followed by transient geese, the honkers well-ahead of white-fronts and snows. On top days, their numbers reach the tens of thousands. In late seasons, these masses of birds press on quickly, perhaps passing through the area on weekdays when few birdwatchers are afield. In advanced springs, they may be tempted to linger, especially when there is much unploughed stubble to feed on. In an area as big as this, aggregations of geese easily escape notice, unless you cover a lot of ground.

The migration of cranes is equally lopsided, the mass of birds passing during a few days in late April or early May, while stragglers will continue to come for two weeks.

UNIVERSITY LIBRARY
UNIVERSITY OF ALBERTA

Weather conditions are of crucial importance also to the build-up of shorebirds. Before the lake is free of ice, yellowlegs, dowitchers, Hudsonian Godwits and Pectoral Sandpipers congregate on flooded fields and wet meadows. During cold springs, the migrating flocks come and go in quick succession. If the weather is warm and there is a lot of meltwater, shorebirds find food plentiful. Their numbers may be large but dispersed over a wide area. The very best conditions for a build-up occur in early and warm springs after a winter of little snow. As meltwater pools and shallow sloughs evaporate, flocks of waders concentrate along the lake where there is plenty of mudflat habitat.

Apart from the vagaries of weather and precipitation, wind is an added factor in the creation and maintenance of shorebird habitat on a large lake like Beaverhill. The waters are pushed toward the downwind side, causing the alternate flooding and drying of shallow shoreline. Such surrogate tidal action is keenly appreciated by the birds. Sandpipers are usually most numerous along the open west shore, upwind of the predominant airflows. The wave-swept strip of sand along the south attracts the majority of sanderlings, while dowitchers, yellowlegs and Stilt Sandpipers favour shallow bays. Black-bellied Plover, knot and turnstones especially frequent the rock-strewn, gravelly points along the east shore.

Towards the middle of May, the number and variety of shorebirds increases, generally coinciding with the massive hatching of midges, locally called lakeflies. During calm periods, the insects take to the air and hang like a smokescreen over the shores, obscuring the view. When the wind picks up, the midges take shelter in vegetation or on the ground. Great numbers of shorebirds collect on the pastures to feed ravenously on the immobilized insects. A top season occurred in 1978, when I estimated the number of Buff-breasted Sandpipers along the north and west shores at more than 1,500, that of pectorals in excess of 10,000. On pastures along the east, there were 300 Black-bellied Plovers, 200 Red Knots and 150 Sanderlings. Dozens of turnstones accompanied scattered flocks of buffies, pectorals, least and semi-palmed sandpipers. During these times of plentiful food, even the Wilson's Phalaropes leave the water and gorge on midges in the shore grass. On 4 June 1978, I saw unprecedented numbers of White-rumped Sandpipers in flocks totalling about 1,100. A hundred or so remained until 17 June. Especially during late springs, when the massive hatching of lakeflies doesn't occur until the end of May, many sandpipers and plovers linger well into June. In other springs, the mudflats and pastures are nearly deserted of migrants by the 25th of May.

After the departure of the northern shorebirds, only locally breeding waders remains: Avocets, Marbled Godwits, Willets, Wilson's Phalaropes, Killdeers, and, sometimes, a few pairs of Piping Plovers. These local shorebirds are a vocal bunch and their protest calls will greet the birdwatcher during early summer, until their young are on the wing.

On and over the water, many other species of locally nesting birds can be seen: Canada Geese, Canvasbacks, Pintails, Mallards, Ruddy Ducks, American Coots and grebes. Thousands of blackbirds and Franklin's Gulls raise their young in the cover of bulrushes. Two or three islands harbour Ring-billed and California Gulls, terns, Black-crowned Night Herons and a few Cormorants. As many as 500 White Pelicans have summered on the lake, and two dozen pairs nested in 1976. Unfortunately, no young were fledged then, probably as a result of human disturbance. However, the birds returned in subsequent years and nested with better success.

While many of the local birds are still raising young, the first migrants from the north are on their way back. By the middle of July, Least Sandpipers appear, soon to be joined by semipalmated and a few plovers. Far out on the lake, Northern Phalaropes begin to gather, building up to substantial flocks during summer, though they never seem to reach the incredible flocks that occur in late May.

By early August, some corners of the lake begin to get crowded with dowitchers, yellowlegs, Stilt Sandpipers, pectorals and smaller peeps. Hudsonian Godwits mingle with their Marbled cousins. An occasional Whimbrel may be there too, but less regularly than in spring. On the pastures, a few Buff-breasted and Upland Sandpipers may be expected among Golden and Black-bellied Plovers. White-rumped Sandpipers and Dunlin are far from common, but a few are seen each fall and spring.

In recent years, while the number of competent birders visiting the lake has greatly multiplied, a growing list of real rarities has been sighted: Surfbird, Sharp-tailed Sandpiper, Ruff, Western Sandpiper, Wandering Tattler, Black-necked Stilt, Common Egret, Sabine's Gull, Black Brant and Long-tailed Jaeger. The chance of spotting rarities like that enhances the birdwatcher's day at this splended place.

Late summer and fall are a good time for the student of raptors. Red-tailed and Swainson's Hawks soar over the fields. When voles and mice abound, harriers and Short-eared Owls can be very common. Families of migrating Kestrels fly from post to post in their quest for grasshoppers and dragonflies. Also Merlins catch dragonflies, eating one after another. Later in the season they will turn their attention to sandpipers. The larger falcons, Peregrines and Prairie Falcons, may turn up too, scattering flocks of shorebirds. Especially late in fall, there is a small chance of spotting a Gyrfalcon.

Other bird hunters, such as the accipiters, may be seen over the wooded east shore, soaring and circling in the manner of all migrating hawks. Their foraging is usually done low and sneaky. A Sharp-shinned Hawk suddenly darts out from cover and tries to seize a Water Pipit that flushes from the shore. Cooper's Hawks and Goshawks course low between the reedbeds and dash after yellowlegs and ducks, that usually escaped unharmed. Perhaps the most spectacular of hunters of small shorebirds are the Parasitic Jaegers, recorded nearly every fall at the lake. Often flying in pairs, they chase sandpipers in a great display of speed and dexterity, forcing their prey to mount high into the sky or to take cover in reeds. They also harass gulls, prompting them to cough up the contents of their crop, which the jaegers then catch in mid-air.

By October, the shorebirds begin to thin out, although the last of them will hang on until freeze-up. In the woods on the east side of the lake, warblers and sparrows become scarce. But on the fields there are more small passerines than ever. When a Merlin hurries low over the stubble, the sky fills with thousands of longspurs and buntings.

Also, waterfowl are still numerous. Ducks are massed along the south shore of the lake where a feeding station has been set up to reduce waterfowl damage to unharvested grain crops. This duck lure program has proven effective in keeping the birds off the fields, to the chagrin of local hunters. A half-mile No Shooting zone was enforced around the entire lake, but recently the northern half has been opened to waterfowl hunters. Unfortunately, the pastures along the north and west side represent the best staging area for geese, which promptly desert the place on opening day. A few hundred Snow Geese and some Canadas still frequent the pastures on the southwest, and smaller flocks hang out along the southeast, staying as long as weather conditions allow. Throughout the fall, migrating geese can be seen passing high over Beaverhill Lake.

The last major event on the birdlife calendar of Beaverhill Lake is the arrival of the Whistling Swans. They line the shores in their thousands, dredging for the roots of aqautic plants. Many will stay until November when ice begins to form. The lake's shallow waters cool quickly, and soon there is ice as far as the eye can see. It spells a sudden end to seven months of teeming birdlife.

The last waterfowl hang on as long as some open water is available, attracting the attention of Bald Eagles that have no trouble in catching the cripples. Also, Snowy Owls try their luck at hunting the last of the waterfowl. Others may be found feeding on muskrat or jackrabbits. If their main prey, the Meadow Vole, is numerous, some owls will stay all winter. If not, they travel south at sundown.

By late November, the snow-covered lake resembles an arctic snowscape. Deep drifts pile up in the lee of willows on the shore. An occasional Coyote ventures out of the protective cover of the eastern woods, where tracks reveal the presence of deer, rabbits, weasels and mink. But birds are few and far between, until March, when the migrants return.

Beaverhill Lake is situated approximately 65 km east of Edmonton. The south shore can be reached from Highway 14. Turn north on the district road 2 miles east of the town of Tofield, and east again at the next junction. The lake can be seen to the north. A trail leads toward the shore. Beware of muddy and rutted conditions! Close the gate upon entering the pasture. Access is tolerated by kind permission of the grazing leaseholders. It is possible to drive along the shore to the dam in the southeast corner. To visit other parts of the lake, you have to back-track and return to the district roads.

GRASSHOPPER SPARROWS IN ROCKY MOUNTAIN PASTURE

by Julie G. Zammuto[1], Richard M. Zammuto[2], and James O. Schieck[2]
[1]Kananaskis Environmental Centre, University of Calgary, Seebe, Alberta
[2]Department of Zoology, University of Western Ontario, London, Ontario

We observed at least 3 singing males Grasshopper Sparrows (*Ammodramus savannarum*) in the Rocky Mountain Forestry Reserve of southwestern Alberta on 19 May 1981. The exact locality was a field, 4.1 trunk road km north of the Cat Creek/Forestry Trunk Road junction, at an elevation of 1675 m.

We observed several singing males repeatedly fly from the surrounding field, land on a fence, sing for ± 10 min. and return to the field. This process was repeated by various males at ± 20 min. intervals for 10 hrs. over a 0.25 km length of fence. The highest number of males seen at one time was 3 in mid-afternoon. We estimated 7 males were present and felt that this species had never been documented to occur in the Rocky Mountains of Alberta. We continued our work on Columbian Ground Squirrels (*Spermophilus columbianus*), did not take a sparrow census, and thus lost the chance to collect considerable, unique, data. However, we did match the males' songs to the Grasshopper Sparrow entry on a tape recording of A Field Guide to Western Bird Songs (1975, Houghton Mifflin, Boston) in the field.

The temperature reached 20°C during the clear day but dropped to 0°C overnight. Snow covered the ground at a depth of 3 cm in the morning but melted by mid-afternoon. Large (30±) flocks of Clay-colored Sparrows (*Spizella pallida*) and Chipping Sparrows (*S. passerina*) foraged in the field the whole day. At least 3 Grasshopper Sparrows were still present on 25 May 1981 when we spent ±10 min. in the area.

This seems to be the first documentation of this species in the Alberta Rocky Mountains (Sadler and Myres, 1976; A.N. Wiseley, pers. comm., 1981; Salt and Salt, 1976). We suspect the birds to be observed in the field in ensuing years since the old forestry trunk road is now barricaded and the new paved road does not traverse the field.

We thank Albertan V. Loewan for drawing our attention to the new record by being so vigorously doubtful of our find and A.N. Wiseley for suggesting this record be published.

LITERATURE CITED

Sadler, T.S. and M.T. Myres. 1976. Alberta birds 1961-1970. Prov. Mus. Nat. Hist. Occas. Paper No. 1, 314 pp.

Salt, W.R. and J.R. Salt. 1976. The birds of Alberta. Hurtig Publ., Edmonton. 498 pp.

SEMIPALMATED PLOVER BREEDING IN ALBERTA

by E. Kuyt
Canadian Wildlife Service
1000, 9942-108 St., Edmonton, Alberta T5K 2J5

The southern extent of the breeding range of the Semipalmated Plover (*Charadrius semipalmatus*) as shown in Snyder (1957), roughly coincides with the treeline in Mackenzie and Keewatin Districts in the Northwest Territories. Clarke (1940) stated that the species had not been recorded in summer inside the timberline near Great Slave Lake. Scotter and Erickson (1963) established breeding of the Semipalmated Plover near Hjalmar Lake, about 225 km northeast of Fort Smith and well within the treeline. Nero (1957) apparently did not encounter this plover in northeast Saskatchewan but earlier (Nero, 1963) established Saskatchewan breeding records for the species along southeast portions of Lake Athabasca. A small corner in northeast Alberta is included in the breeding range of the Semipalmated Plover (Godfrey, 1966) and the author specifically mentions Lake Athabasca. Salt and Salt (1976) indicate the species probably nests in northeastern Alberta. These plovers were observed by Soper (1942) in the Hay Camp area, Wood Buffalo National Park (WBNP), and an adult and juvenile bird collected on 12 and 24 August, 1933.

On 20 June 1981 I received a nest record card from John Bronaugh of Paris, Kentucky, USA, reporting a nest of a Semipalmated Plover with four eggs about 10 m from Grosbeak Lake, WBNP. Grosbeak Lake is the local name for a shallow lake located along Grosbeak Trail, one of the trails developed by WBNP staff for summer hiking and winter cross-country skiing. The geographic location is about 59°48'N, 112°W and that is about 23 km south of the Alberta-NWT border.

After receipt of the card I checked with WBNP staff and learned that on a recent trip a nest and eggs of Killdeer (*Charadrius vociferus*) had been found on the edge of Grosbeak Lake but a Semipalmated Plover had not been knowingly observed by the staff.

On 23 June 1981 I had the opportunity to check the report. I left the Grosbeak Lake hiking trail where it met the lake and cut across the dry lake bed to a

number of small islands, now exposed above the dry lake as isolated patches of willow, spruce and poplar. As I rounded one of these "islands" I was met by the unmistakable "tjoo-li, tjoo-li" calls of the Semipalmated Plover, calls which I remember so well from my days in the Thelon Game Sanctuary where this plover is a common breeder. As I stopped to look over the area, my eye was first caught by a small downy chick running across the flats to a grassy patch near the shore. Shortly thereafter I saw a second chick and was able to catch and photograph it. The chicks were small, downy and only a few days old at the most. They had downy white undersides and tiny webs between the toes. They lacked the dark chestband and elongated tail tufts present on young Killdeer. I took the chicks to be those of the Semipalmated Plover. At least seven of these plovers (several adults feigning injured wings) and a pair of adult Killdeer (also obviously near a nest or young) were in the immediate vicinity.

I found four empty nest cups on the gravelly shore where the chicks were first seen. Distance between nests was about 10 m. In the Thelon River area I sometimes found small semi-colonies of these plovers, often four or five nests close together.

As I continued my walk, I spotted another pair of Semipalmated Plovers on a gravelly ridge between two islands about 100 m from where I first saw the other plovers. As I got closer, I noted one of the birds feigning injury. By waiting on a large rock and watching the birds, I found the nest in short order. The nest contained four eggs and was of the same size as those I had found earlier. It was a mere depression in the gravel, lined with small flat chips of stone. The incubating bird seemed anxious to get back on the nest and it did so readily as I moved a short distance away. Possibly the eggs were close to hatching.

Although the instructions on the nest record card were not sufficiently descriptive to enable me to find the nest, I believe the chicks I saw may have been from the Semipalmated Plover's nest found by Mr. Bronaugh. The location of the nest and eggs I found does not fit the site description given by Mr. Bronaugh and therefore must be a different nest. A cursory inspection through binoculars indicated additional suitable nest habitat west of the just-discovered sites.

On 24 August 1978 when carrying out waterfowl banding in the Birch River delta, WBNP, (58°28'N, 112°16'W) about 150 km south of Grosbeak Lake, Kuyt and Johnson (1978) observed four Semipalmated Plovers feeding on the muddy shore near one of our trap sites. Two of the birds showed the brownish-gray markings of head and breast band diagnostic of the juvenile plover. The birds were seen in the same area on several successive days and it is possible that they, too, were produced locally.

This note documents the first recorded nesting of the Semipalmated Plover in Wood Buffalo National Park and possibly in Alberta.

LITERATURE CITED

Clarke, C.H.D. 1940. A biological investigation of the Thelon Game Sanctuary. Nat. Mus. Can. Bull. 96 (Biol. Ser. No. 25). 135 pp.

Godfrey, W.E. 1966. The Birds of Canada. Nat. Mus. Can. Bull. 203. 428 pp.

Kuyt, E. and B.E. Johnson. 1978. Report on 1978 Peace-Athabasca delta banding project. Unpubl. rep. files, CWS, Edmonton. 42 pp.

Salt, W.R. and J.R. Salt. 1976. The Birds of Alberta. Hurtig Publ., Edmonton. 498 pp.

Scotter, G.W. and L.E. Erickson. 1963. Birds of the Taltson River region, NWT. Blue Jay 20(2): 64-67.

Snyder, L.L. 1957. Arctic Birds of Canada. Univ. of Toronto Press. 310 pp.

Soper, J.D. 1942. The Birds of Wood Buffalo Park and vicinity, Northern Alberta and District of Mackenzie, N.W.T. Canada. Trans. Royal Can. Inst. 24:1. pp. 19-97.

[Line drawing, Semipalmated Plover, by Tom S. Sadler]

PROFILES ON ORGANIZATIONS WHOSE ACTIVITIES OVERLAP THOSE OF FAN: 6

THE SIERRA CLUB OF WESTERN CANADA ALBERTA GROUP

Submitted by Pat Karril
3019 Beil Ave. NW, Calgary, Alberta T2L 1K6

The Sierra Club of Alberta was initially organized in Calgary in 1969, and became a group of the Western Canada chapter of the Sierra Club when it was formally established in 1970. It was incorporated in Alberta under the Societies Act in May, 1973. In 1978 the Western Canada Chapter became the Sierra Club of Western Canada, a federally-chartered, autonomous organization. The Sierra Club of Alberta is now the registered charitable organization, while conservation activities are carried on under the title of Sierra Club of Western Canada, Alberta Group.

Our main concerns over the past years have been working to preserve the mountain national parks and other wild areas of the province, as well as promoting the wise use of energy and opposing projects which would diminish environmental quality in order to feed the nation's greed for ever-increasing quantities of energy. Although our campaigns have not always been as successful as we might have wished, we feel that we have won a few wars in spite of losing a number of battles. In cooperation with other environmental groups, we have achieved better environmental consciousness in governments at all levels, and increased public participation in decision making on environmental issues. We have also established and maintained contact with representatives of the burgeoning environmental arm of the petroleum industry.

The Sierra Club differs from other conservation groups in having an extremely broad base of interest, ranging across national parks and other wild areas to various energy-related issues, whereas many other groups are either local and single-issue oriented, or concentrate on one specific area, such as parks or wildlife management.

Issues on which we are currently working include: (1) National Parks: Proposed twinning of Trans-Canada Highway, Banff Traffic Circle to Sunshine Village turnoff; summer use of Sunshine Village Ski Area; Mountain parks planning; (2) East Slopes: Historic trails of southwestern Alberta project; various oil and gas installations, especially current Moose Mountain pipeline; (3) Air emissions - acid rain; (4) Hazardous waste disposal; and (5) Nuclear energy and the threat of nuclear war.

[Editor's note: the mailing address for The Sierra Club of Western Canada is: P.O. Box 342, Station "G", Calgary, Alberta T3A 2G3]

ANIMAL EXCHANGES WITH CHINA

by Dr. A.F. "Al" Oeming
Polar Park, R.R. 4, Sherwood Park, Alberta T8A 3K4

Very few westerners have been fortunate enough to have access to the unique fauna of the People's Republic of China, for China has never traded freely with any of the western nations, and it has been extremely difficult and frustrating to negotiate animal exchanges. In 1980, after 16 arduous years of dialogue and negotiation with my colleagues in China, we were able to consummate the first major exchange of animal species. During the course of my visit to the northeast Province of Heilongjiang in the fall of 1980, I had the good fortune to meet many of the senior Chinese zoologists, including Dr. Zeng Xue Zhang, Director of the Harbin Zoo and long-time chairman of the Chinese Zoological Society. Dr. Zhang has strong influence in the trading of any animals, the acquisition through live capture from the Chinese hinterlands, and also in the overall matter of disposition of the animals. China is particularly careful where their animals are sent and who the recipient might be, for China rightly regards their rare animals as cultural gems and they will never be sent forth without extremely careful deliberation.

My principal aim at the outset of negotiations was to acquire those species that could withstand our temperatures. Northeast China is extremely cold in the winter with perhaps considerably more snow than we get in this part of Alberta. Hard, bitter winds sweep in from northern Siberia and the country of northeast China endures a long winter. The animals from that region are, therefore, extremely well-adapted to our climate. I had little knowledge as to what the distribution of the various species that I was interested in might be. Literature available in the western world makes only sparse references to the mammals of northeast China; in fact, in most cases there is absolutely nothing written about them.

The end action of our travelling and discussions was that we agreed upon a list of species that the Chinese would regard as the beginning of a long-time exchange program. I could barely suppress my delight when they listed the species for me that they felt we could safely acquire from them and that could be shipped with a minimum of risk by air to Edmonton. First on the list was a pair of Manchurian Lynx (*Felis lynx linnaeus*). This incredible cat is the largest member of the lynx family. These lynx are rare in China and, although highly-prized for their fur, they are rigidly controlled and protected. The next species listed was a pair of Yellow-throated Marten (*Martes flavigula*). Had the exchange list stopped there, I would have been overjoyed. I had long been interested in this striking member of the weasel family. Not abundant, it is carefully protected and trapping is permitted on a very limited and strictly controlled basis. I saw my first specimen as a mount in the study museum at the Fenglin Protectorate in northeast China, which is principally a protectorate for the rare Northeast China Tiger. I was amazed at the size of the marten. My Chinese colleagues explained to me that in winter pelage, the Yellow-throated Marten assumes extremely brilliant colours; the long throat patch becomes a vibrant yellow and, with the almost black fur on the rest of the body, it is an incredibly striking animal. I very much wanted a pair of these, inasmuch as no Yellow-throated Martens have emerged from north China, north Korea or Siberia in many decades. Added to these martens was a pair of Sable (*Martes zibellina*), probably the most valuable fur-bearer in the world. This was unusual to be included on the exchange list in that sable have never before been released from China for fear that a competitive factor could arise through the breeding of the stock that

is sent out and become a threat to the lucrative sable fur market.

Next on the list was a pair of Long-haired Leopard Cats (*Felis bengalensis* Kerr). I had heard only smatterings of reports from fellow travellers throughout that part of Asia who talked of Long-haired Leopard Cats. I, personally, didn't believe they existed, but, when I questioned my Chinese hosts, they assured me they did exist, that they were available, and that they would certainly see to it that I got a pair. The Long-haired Leopard Cat is larger than the Common Leopard Cat from Indo-China and, with an incredibly thick fur, can withstand extreme cold.

Also included was a pair of Asiatic Wild Dogs (*Cuon alpinus*) of the northern race. They, at first sight, appear as though they would be a cross between a red fox and a coyote, with the red hair predominant. These animals are actually cold climate jackals, renowned in China for their cunning, endurance and ability to survive under extremely difficult conditions. With China's large human population, very few predators are condoned, and the wild dogs have been persecuted relentlessly in the past. They are becoming increasingly rare and are now being protected in some areas because of their scarcity.

The Chinese took note of the fact that when we were in the great forest of the Fenglin Protectorate, I kept admiring the beautiful black tufted eared squirrels and often remarked about them. They indicated that six of the northeast China Tufted Squirrels would be included in the exchange, and also said that after they settled down in captivity (which takes a year or two) they would breed quite readily.

The most prized package of all in the shipment was a pair of northern Lesser or Red Pandas (*Ailurus fulgens* Styani). The Chinese indicated that seldom are the Lesser Pandas sent out of China. San Diego Zoo had been the sole recipient of the species prior to my receiving a pair. This panda is much larger than the Indian race, much redder in pelage, has extremely dense fur and is superbly adapted to cold climates. However, they must be given daily a good amount of arrow-type bamboo in their diet which, fortunately, is available on the western coast of British Columbia.

All of the animals except the Pandas arrived in early April, and the Pandas came in the first part of August. I am happy to report that since their arrival, the Leopard cats have bred and successfully raised three young. This is only the second time this has happened in the history of the species in captivity (the first success was in Harbin Zoo in northeast China). The Asiatic Wild Dogs have also bred successfully here, producing four puppies which have been raised with no problems at all. The Yellow-throated Martens gave us the biggest fright, because when the shipping crate was opened, the female marten was totally dehydrated and only semi-conscious. Quick action saved her life and she rallied beautifully. We have great hopes that the pair will breed in the coming year. The lynx are a young pair of immense size, at least twice as large as a good-sized Canada Lynx. We are hopeful that they, too, will breed in the coming year.

There are still many animals to come from China in the future. The Chinese delegation that recently visited us have selected a number of species which they would like to have sent to China. We have previously sent many animals to China, including llamas, Snowy Owls, Sandhill Cranes, and Muskoxen. As mentioned previously, we are targeting our sights on those animals that can withstand our climate. As fitting with the philosophy of Polar Park and inasmuch as all the animals originate from cold regions of the world, it is only common sense that they should be brought, if anywhere, into an area where they will have similar weather conditions.

At the moment, the Chinese treasure chest of animals is the most inviting, the most alluring quest in the zoo world of this day. It's an exciting exchange to be involved in, and we feel fortunate that we have been able to establish this impor-

tant bridgehead with our Chinese colleagues. We look forward to many years of friendly exchanges and good reproductive results at this end.

RANGE EXCLOSURES IN THE WESTERN REGION NATIONAL PARKS

by G.C. Trottier
Canadian Wildlife Service
1000, 9942-108 Street, Edmonton, Alberta T5K 2J5

It is possible that readers of this periodical have, on occasion, discovered small fenced areas while travelling in our western national parks and wondered about the purpose for such intrusions in an otherwise natural setting. Recently, Parks Canada authorities wondered the same thing. Originally established as range management study areas, their continued usefulness was questioned by park administrators. Consequently, the Canadian Wildlife Service was asked to review the matter and identify needs for maintaining the exclosures in the light of current range management problems in national parks.

In 1975 I researched the history of the exclosures, collated all the data from vegetation analyses, and outlined a program for their future (Trottier, 1976). Between 1976 and 1981 the Canadian Wildlife Service resurveyed the vegetation plots at every site and reported on the program separately for each park as follows: Waterton Lakes National Park (Trottier, 1977), Elk Island National Park (Milner, 1977), Jasper National Park (Trottier, 1979) and Banff National Park (Trottier, in prep.).

The Canadian Wildlife Service inventory located 19 range exclosures; four in Banff, five in Elk Island, five in Jasper and five in Waterton Lakes. All had been established under the direction of officers of the Canadian Wildlife Service. The oldest exclosure was established in 1944 by Dr. Ian McTaggart-Cowan at Hillsdale Meadows in Banff National Park. The most recent was a series of five exclosures located on Bighorn Sheep winter range in Jasper, Banff and Waterton Lakes Parks by Dr. John Stelfox to study the relationships of range productivity and Bighorn Sheep herd productivity (Stelfox, 1976). Others responsible for exclosures were Dr. Frank Banfield, Dr. Donald Flook and Dr. William Holsworth.

Range exclosures protect experimental areas from the grazing activities of a particular class of animal. They consist of two plots chosen so they have closely similar soils and vegetation; one plot is fenced to eliminate grazing and becomes a measure of what the range is naturally capable of producing. The contrast between plant species composition on the two plots is taken as a measure of the impact of grazing. Assuming that the ungrazed plot is the ideal condition for the local vegetation, one can rate the condition and quality of the grazed plot by the extent of its deviation from the ideal.

On ranges badly depleted by grazing, protection of sample plots will also provide a guide to the rate of recovery that can be expected, either under ungrazed conditions or under controlled grazing. Comparisons of grazed versus ungrazed conditions increase scientific knowledge of the role of large herbivores in the formation of rangeland plant communities (Laycock, 1975).

The exclosures in our parks, except those studied by Dr. Stelfox, were established during the 1940's and 1950's, an era of elk population irruptions and subsequent reduction slaughters. Elk were overgrazing their range, and there was concern

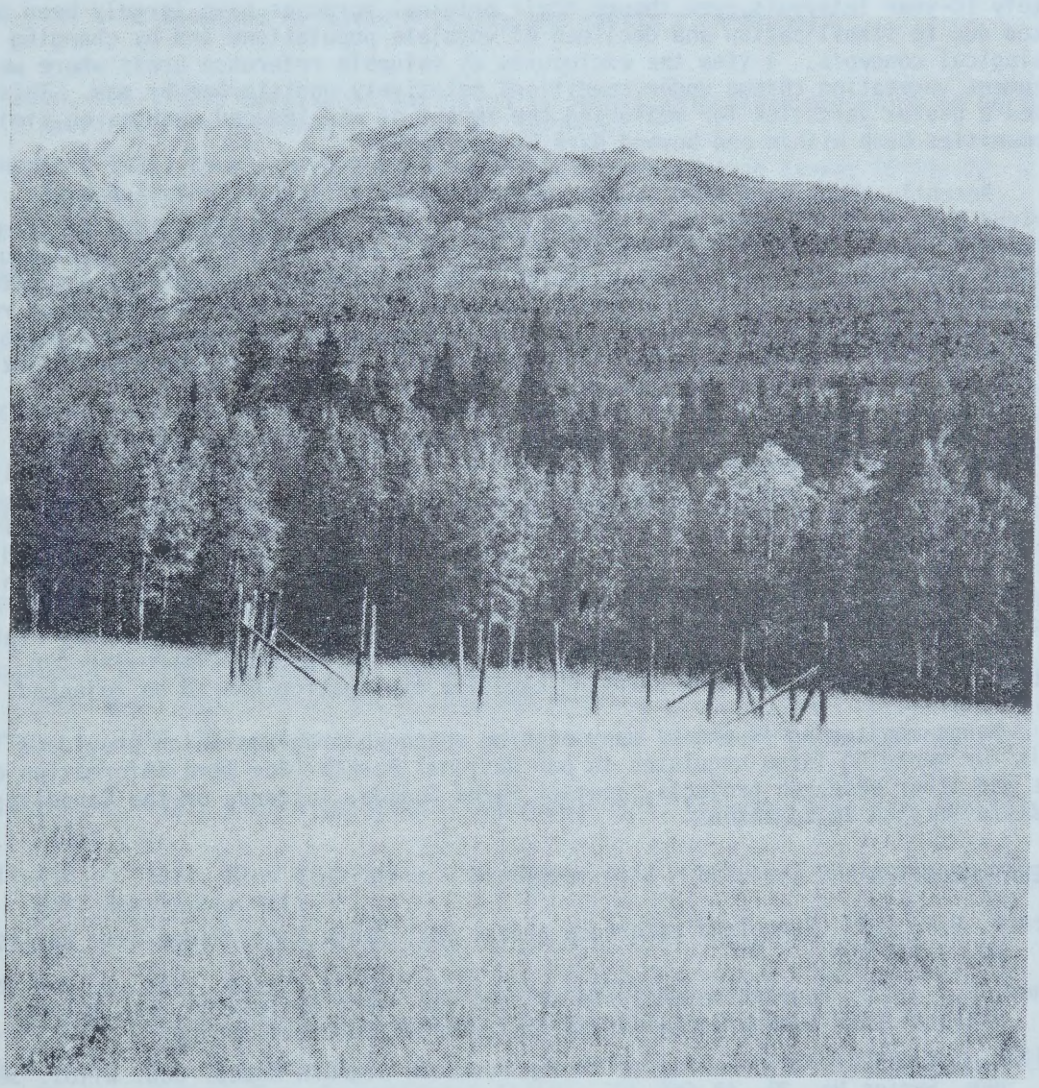


Plate 1. Hillsdale range exclosure, Banff National Park. There are 19 of these fenced range management study areas in the Western Region national parks.

that irreversible damage was imminent. This led to concern for the welfare of other ungulates dependent upon those ranges, particularly Bighorn Sheep in the mountain parks and Moose and Bison at Elk Island Park. In this context, the exclosures were used as reference points where researchers could measure the recovery of over-grazed range and decide on the necessity of continuing reduction slaughters.

I recommended that all the exclosures be maintained and monitored at approximately 10-year intervals even though their original purposes have largely been outdated due to stabilization and declines of ungulate populations and by changing ecological concepts. I view the exclosures as valuable reference areas where we can document vegetation change under conditions relatively undisturbed by man. This provides a useful yardstick for measuring the impact of man-induced changes on similar communities both within and beyond park boundaries.

Recently there have been several opportunities to apply the information derived from the exclosures thus reaffirming the need for continuing the program. In Banff, they are being used to interpret to the public the history of elk populations and their impact on the vegetation, and the changing concepts of ungulate management in the park (ie. herd reductions versus allowing natural population regulation to proceed through die-offs). Data on grass production obtained at these reference sites have been valuable in managing requests for horse grazing by outfitters who provide backcountry tours.

Elsewhere, in Waterton Lakes Park, a request for emergency cattle grazing during a drought in southern Alberta in 1977 was considered inappropriate on critical elk winter ranges. Long-term range condition data collected at two exclosures showed that this range was in only fair condition and could not adequately support additional grazing pressure. Also in Waterton, elk cause considerable damage to forage and grain crops on lands adjoining the park. One reason advanced for this situation is that the carrying capacity of park ranges has been exceeded; therefore, elk are forced to use adjacent lands more extensively. Data collected at the Stoney Flats and the Badlands exclosures reveal that range condition has been improving for several years. Therefore, the carrying capacity explanation has to be rejected.

Range monitoring is one of many ongoing research programs which provide a basis for managing large ungulates in our National Parks. For more information on this and other research projects, contact Parks Canada, Calgary, or the Canadian Wildlife Service in Edmonton.

LITERATURE CITED

Laycock, W.A. 1975. Rangeland reference areas. Soc. Range Mgmt. Range Sci. Series No. 3. 34 pp.

Milner, B.J. 1977. Vegetation analysis of ungulate range exclosures, Elk Island National Park. Unpubl. Can. Wildl. Serv. Rep., Edmonton. 95 pp.

Stelfox, J.G. 1976. Range ecology of Rocky Mountain Bighorn Sheep. Can. Wildl. Serv. Rep. Series No. 39. 48 pp.

Trottier, G.C. 1976. Big game range exclosures in the national parks of western Canada. Unpubl. Can. Wildl. Serv. Rep., Edmonton. 160 pp.

Trottier, G.C. 1977. Vegetation change in response to protection from grazing in the Fescue grassland of Waterton Lakes National Park. Unpubl. Can. Wildl. Serv. Rep., Edmonton. 54 pp.

Trottier, G.C. 1979. Analysis of range exclosures, Jasper National Park. Unpubl. Can. Wildl. Serv. Rep., Edmonton. 60 pp.

RECENT PUBLICATIONS ON THE NATURAL HISTORY OF ALBERTA

Compiled by David M. Ealey and Martin K. McNicholl

Adkisson, C.S. 1981. Geographic variation in vocalizations and evolution of North American Pine Grosbeaks. Condor 83: 277-288.

Anonymous. 1981. Development threatens national park. Nature Canada 10(5): 22. - Wood Buffalo National Park, Alta.-NWT.

Assman, P. 1981. Unusual nest site of a Black-billed Magpie. Edmonton Nat. 9(2):21-22.

Bogart, J.P. 1981. Herpetofaunal assemblages in Canada. Bull. Can. Soc. Zool. 12(2): 34. - abstract only.

Bousfield, E.L. 1981. Biogeographic indicators within the higher Crustacea of North America. Bull. Can. Soc. Zool. 12(2): 35. - abstract only.

Bousfield, E.L. and J.R. Holsinger. 1981. A second new subterranean amphipod crustacean of the genus *Stygobromus (Crangonyctidae)* from Alberta, Canada. Can. J. Zool. 59: 1827-1830.

Bright, D.E. 1981. Taxonomic monograph of the genus *Pityophthorus* Eichhoff in North and Central America *(Coleoptera: Scolytidae)*. Mem. of Entom. Soc. Can. No. 118. 378 pp.

Chang, C. and M. Oosterveld. 1981. Effects of long-term irrigation on soil salinity at selected sites in southern Alberta. Can. J. Soil Sci. 61: 497-505.

Chengaleth, R. 1981. A faunistic survey of the littoral Cladocera of Canada. Bull. Can. Soc. Zool. 12(2): 40. - abstract only.

Chorney, L. 1981. Who needs to go to a movie to see star-wars? Edmonton Nat. 9(2): 17-19 - on hummingbirds.

Collister, D. 1981. Bird highlights - September 1981. Calgary Field Nat. Newsletter 3(3): 2.

Collister, D. 1981. Bird highlights - September [sic = October] 1981. Calgary Field Nat. Newsletter 3(4): 2.

Collister, D. 1981. Calgary birds June to August, 1981. Pica 2: 104-110.

Cryderman, A. 1981. Return of the Swift Fox. Nature Can. 10(5): 29.

Cox, M. 1981. Field sightings. Edmonton Bird Club Newsletter Nov. 1981: 2.

Gerber, G.H. 1981. Cold-hardiness in the eggs of the red turnip beetle *(Coleoptera: Chrysomelidae)*. Can. Entomologist 113(9): 795-800.

Giroux, J.-F. 1981. Interspecific nest parasitism by Redheads on islands in southeastern Alberta. Can. J. Zool. 59: 2053-2057.

Gollop, B. 1981. The spring migration, Prairie Provinces Region. Amer. Birds 35(5): 834-835.

Grescoe, P. 1981. Too many ducks in Canada. Inter. Wildl. 11(6): 4-11.

Grover, B. and C. Primus. 1981. Investigating whether a large hydro development can be environmentally compatible - the Slave River Hydro Feasibility Study. Can. Water Resources J. 6(3): 47-62.

Hackbarth, D.A. 1981. Natural temporal variations in the chemistry of shallow groundwaters, Athabasca Oil Sands area, Alberta. Can. J. Earth Sc. 18(10): 1599-1608.

Handford, J. 1981. Dinosaur field trip. Sask. Nat. Hist. Soc. Newsletter No. 58: 7.

Hoffman, R.S. 1981. Different voles for different holes: environmental restrictions on refugial survival of mammals. pp. 25-44 in G.G. E. Scudder and J.L. Reveal (Eds.). Evolution today. Prov. of the 2nd Internatl. Cong. of Syst. and Evol. Biol., Hunt Inst. for Botanical Documentation, Carnegie-Mellon Univ., Pittsburgh.

Hyslop, C.and R.M. Poulin. 1981. Annual report to banders - summary of bird banding in Canada in 1979. Can. Wildl. Serv. Prog. Notes No. 125. 12 pp.

James, R.D. 1981. Factors affecting variation in the primary song of North American Solitary Vireos *(Aves: Vireonidae)*. Can. J. Zool. 59: 2001-2009.

Johnston, S. and D. Thorne. 1981. Odyssey development: a step closer? Nat. & Prov. Parks Assoc. of Can., Edmonton Chapter, Newsletter 8(1): 7.

Karpinski, D.A. 1981. Habits of the Great Horned Owl. Edmonton Nat. 9(2): 9-16.

Kennedy, M.J. 1981. A revision of species of the genus *Haematoloechus* Looss, 1899 *(Trematoda: Haematoloechidae)* from Canada and the United States. Can. J. Zool. 59: 1836-1846.

King, B. 1981. The field identification of North American pipits. Amer. Birds 35(5): 778-788.

Kuyt, E. 1981. Population status, nest site fidelity and breeding habitat of Whooping Cranes. pp. 119-125 in J. Lewis (ed.) Crane Research Around the World, Internatl. Crane Foundation.

Kuyt, E. 1981. Clutch size, hatching success, and survival of Whooping Crane chicks, Wood Buffalo National Park, Canada. pp. 126-129 in J. Lewis (ed.) Crane Research Around the World, Internatl. Crane Foundation.

Lange, J. 1981. The hunter and the hunted. Edmonton Nat. 9(2): 22-24.

Mackay, W.C. 1981. Space utilization by Northern Pike. Bull. Can. Soc. Zool. 12(2): 66. - abstract only.

McGriffin, W.C. 1981. Guide to the Geometridae of Canada (Lepidoptera) II. Subfamily Ennominae. 3. Mem. of Entom. Soc. Can. No. 117. 153 pp.

McNicholl, M.K. (Ed.) 1981. The history of the Federation of Alberta Naturalists and its corporate member clubs. Alta. Nat. Spec. Publ. No. 1. iv. + 151 pp.

McNicholl, M.K. 1981. Egg-teeth of Spotted Sandpipers. Nor. Amer. Bird Bander 6: 44-45.

McNicholl, M.K. 1981. Fly-catching by male Red-winged Blackbirds. Blue Jay 39: 206-207.

Michener, G.R. 1981. Ontogeny of spatial relationships and social behaviour in juvenile Richardson's Ground Squirrels. Can. J. Zool. 59: 1666-1676.

Moyles, D.L.J. 1981. Seasonal and daily use of plant community by Sharp-tailed Grouse *(Pedioecetes phasianellus)* in the parklands of Alberta. Can. Field-Nat. 95(3): 287-291.

Moyles, D.L.J. and D.A. Boag. 1981. Where, when and how male Sharp-tailed Grouse establish territories or arenas. Can. J. Zool. 59(8): 1576-1581.

Peschken, D.P. and A.T.S. Wilkinson. 1981. Biocontrol of Canada Thistle *(Cirsium arvense)*: releases and effectiveness of *Ceutorhynchus litura (Coleoptera Curculionidae)* in Canada. Can. Entomologist. 113(9): 777-785.

Rothfels, K. and D. Featherstone. 1981. The population structure of *Simulium vittatum* (Zett.): the IIIL-1 and IS-7 sibling species. Can. J. Zool. 59: 1857-1883.

Scudder, G.G.E. 1981. Two new species of *Lygaeinae (Hemiptera: Lygaeidae)* from Canada. Can. Ent. 113: 747-753.

Smith, H.C. 1981. The distribution of mammals in southeastern Alberta as indicated by the analysis of owl pellets. Blue Jay 39: 230-238.

Stepney, P.H.R. and P.C. Boxall. 1981. First record of the Black-chinned Hummingbird in Alberta. Wilson Bull. 93: 405-406.

Stiles, D. 1981. 1981 Calgary area bluebird trail results. Pica 2: 93-99.

Stiles, D. 1981. North American Bluebird Society. First regional conference, Brandon, Manitoba, June 21-28, 1981. Pica.2: 100-103. - includes brief notes on Alberta contributions.

Stiles, D. 1981. The annual bus trip: Kananaskis Provincial Park. Pica 2: 120-121.

Stock, M.W. and P.J. Castrovillo. 1981. Genetic relationships among representative populations of five *Choristoneura* species: *C. occidentalis, C. retiniana, C. biennis, C. lambertiana,* and *C. fumiferana (Lepidoptera: Tortrisidae).* Can. Ent. 113: 857-865.

Thormin, T.W. 1981. Bird sightings. December 1, 1980 to February 28, 1981. Edmonton Nat. 9(1): 15-18.

Thormin, T. 1981. Bird sightings - spring and summer 1981. Edmonton Nat. 9(2): 3-8.

Thormin, T.W. 1981. Carnivores. Edmonton Nat. 9(2): 19-21.

VanderKloet, S.P. and I.V. Hall. 1981. The biological flora of Canada. 2. *Vaccinium myrtilloides* Michx., Velvet-leaf Blueberry. Can. Field-Nat. 95(3): 329-345.

Walker, K. 1981. Strathcona Science Park. Natl. & Prov. Parks Assoc. of Canada, Edmonton Chapter, Newsletter 8(1): 6.

Wiseley, A.N. 1981. The 1980 Kananaskis Country Peregrine reintroduction project. pp. 62-65 in M.K. McNicholl (Ed.) Bird banding in Alberta. Alta. Nat. Spec. Publ. No. 2.

Young, A.G. 1981. Observations of the Merlin from Unity, Saskatchewan. Blue Jay 39: 38-40. - includes a record at Chauvin, Alberta.

OVERHEARD. . .

"The pioneer's assault on the forest, his combative stance, his fear of and antipathy toward the wild are easily understood. But such attitudes have by no means been confined to the early settler or pioneer poet. Even now, after so much of the wilderness has been subjugated, similar attitudes persist. They are implicit in the exaggerated exploitive thrust of some who would harness, tame, harvest, or "improve" everything that is free, wild and unmanipulated. We see them in many who still equate 'wilderness' with 'wasteland'. They are sometimes evident in the sport hunter, the fish hog, the strip-miner, the boomers of the Gross National Product, and those who insist that parks be characterized by roads, parking lots, hot and cold running water, and indoor amusements."

From "Marked by the Wild", Litteljohn & Pearce, eds., reprinted by permission of The Canadian Publishers, McClelland & Stewart Ltd., Toronto

A BIRDER'S GUIDE TO BANFF NATIONAL PARK

by Geoffrey L. Holroyd and Kevin J. Van Tighem
Canadian Wildlife Service
Box 1343, Banff, Alberta TOL OCO

Over 230 species of birds have been recorded in Banff National Park but relatively few of them are abundant. Generally birds are more abundant in the lower Bow Valley than elsewhere in the park. However, some species, the mountain specialties, can only be found at higher elevations away from the Trans-Canada Highway. Located between the moister forests of B.C. and the dry prairies, Banff has had many records of rare migrants as well as occasional breeding records of species from these areas.

The purpose of this guide is to direct the interested birder to the more productive and interesting birding spots in Banff National Park, as well as to certain representative area of habitat for mountain species that may be of special interest to visiting birders. It is hoped that this guide, used in conjunction with the checklist of birds of Banff and Jasper, available from Park Information Centres, will provide birders with all the information needed to have an interesting and fulfilling experience in Banff.

By far the most productive time for birding is from an hour before down (about 5 am at this latitude) until 9 or 10 in the morning. In order to locate some of the more interesting western species, such as Varied Thrush and Townsend's Warbler, an ability to recognize bird songs is indispensible.

The following list of locations (see Figure 1) is not in order of preference. The first location is near the East Gate of Banff National Park, and the successive locations are progressively farther west along Highways 1 or 1A, then north along Highway 93 towards Jasper National Park (with a brief jaunt south on Highway 93).

1. CARROT CREEK FAN

Location: Adjacent to Highway 1, 3 km west of the East Gate, or 13 km east of the Banff Traffic Circle. Park on the east side of the highway at the end of a short gravel road.
Habitat: Aspen forest with many young spruce coming up in the understory. The forest is relatively open, with grassy ground cover and many dead or dying poplars.
Birding: Late May to mid-July - Many species typical of aspen woodland can be found here during the breeding season. These include Ruffed Grouse, Yellow-bellied Sapsucker, Least Flycatcher, Warbling Vireo, Orange-crowned Warbler and Black-capped Chickadee. Pygmy Owls nested here in 1977. August and early September - Flocks of all three species of chickadees, Warbling Vireo, Mountain Bluebird, Chipping Sparrow and Dark-eyed Junco may be found in association with other, less common species.

2. LAKE MINNEWANKA AND TWO-JACK LAKE

Location: Both these lakes are on the Lake Minnewanka loop drive that begins at the Banff traffic circle and wanders for 6 km to Lake Minnewanka. Picnic sites and parking areas are available at both lakes.
Habitat: Lake Minnewanka is a large, deep, cold lake bordered by steep pine-forested slopes. Two-Jack Lake is smaller and the shore is somewhat less steep, with lodgepole pine and Douglas fir forest.

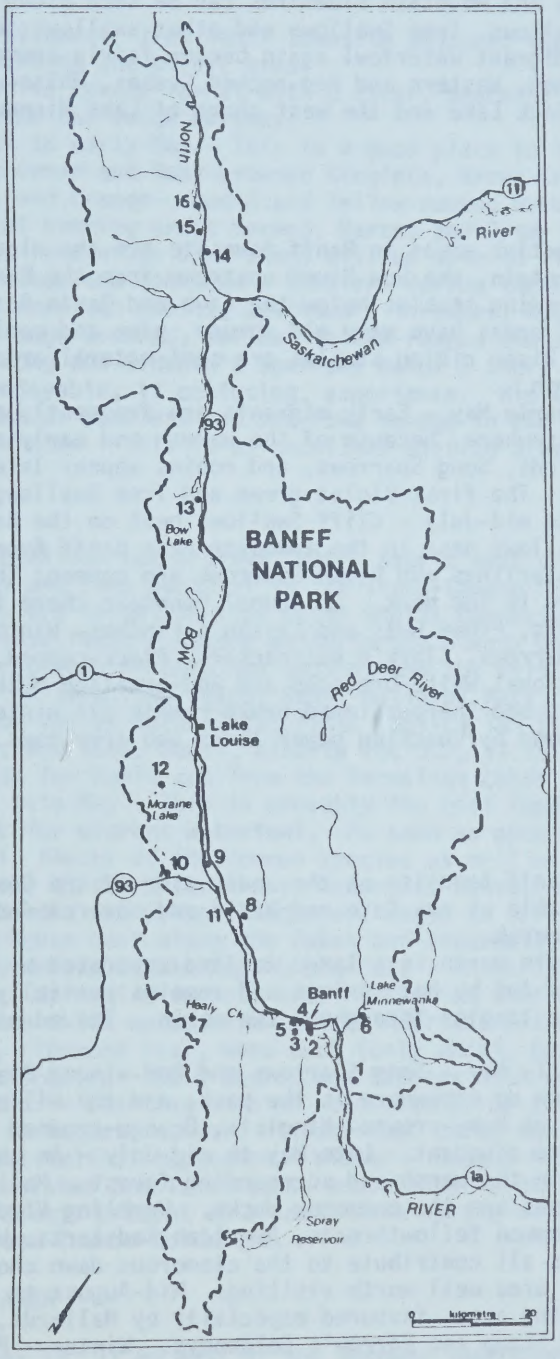


Figure 1. Birding locations in Banff National Park.

Birding: Early April to late May - Waterfowl migration begins as soon as leads form in the ice in April. Common Loon, Canada Goose, Mallard, Green-winged and Blue-winged Teal, American Wigeon, Ring-necked Duck, Barrow's Goldeneye, Bufflehead and other ducks gather on the lakes and Mountain Bluebirds can be seen along the roadsides. Summer - Violet-green Swallows, Tree Swallows and other swallows feed over the lakes. September and October - Migrant waterfowl again become fairly common, particularly Common Loons, Coots, Horned, Western and Red-necked Grebes, White-winged Scoters and Ring-billed Gulls. Two-Jack Lake and the west shore of Lake Minnewanka are good for migrant passerines.

3. BANFF TOWNSITE

Location: The most productive areas in Banff townsite are the older residential areas at the foot of Tunnel Mountain, the Bow River upstream from the Banff Avenue bridge, and the vicinity of the riding stables below the Cave and Basin Road.
Habitat: The residential areas have many old spruce, pine and poplar trees and ornamental gardens. The Bow River riding stables are semi-natural areas of willow and spruce vegetation and marsh.
Birding: Late March to early May - Early migrants are frequently seen in the townsite before they occur elsewhere, because of the warmth and early snow-melt of the town. Red-winged Blackbirds, Song Sparrows, and robins appear late in March, particularly near the stables. The first Violet-green and Tree Swallows appear over town in late April. Mid-May to mid-July - Cliff Swallows nest on the Banff Avenue bridge, Violet-green and Tree Swallows nest in the townsite near Banff Avenue and feed over the Bow River. Robins, starlings and House Sparrows are common: the latter two species are rare elsewhere in the park. On Tunnel Mountain there is a chance of finding Clark's Nutcrackers, Pygmy Owls and Cassin's Finches. Winter - Because of the abundance of House Sparrows, Clark's Nutcrackers, Black-capped, Boreal and Mountain Chickadees and occasional White-breasted and Red-breasted Nuthatches, occasional raptors such as Pygmy Owls and Sharp-shinned Hawks remain all winter in the townsite. These are most readily found by checking power lines and tree tops. Dippers winter at Bow Falls.

4. CAVE AND BASIN SWAMP

Location: 2 km west of Banff townsite on the south side of the Bow River via Cave Avenue. Parking is available at the Cave and Basin and several footpaths go down through the trees to the marsh.
Habitat: The cave and basin marsh is a large wetland separated by a natural levee from the Bow River. It is fed by hot springs and remains partially open all winter. Tall willows grow in dense tangles throughout the marsh. The edges are lined by spruce and pine forest.
Birding: Late March to early May - Song Sparrows and Red-winged Blackbirds are often found here before they show up elsewhere in the park, and the willows are favoured by such other early migrants as Ruby-crowned Kinglets, Orange-crowned Warblers and Dark-eyed Juncos. Waterfowl are abundant. Late May to mid-July - An abundance of waterfowl and small passines breed in the marsh and surrounding forest. Mallards, Green-winged Teal and Barrow's Goldeneyes are the commoner ducks. Warbling Vireos, Yellow Warblers, Yellow-rumped Warblers, Common Yellowthroats, American Redstarts, Wilson's Warblers, Song and Savannah Sparrows all contribute to the clamorous dawn choruses of June mornings and make this an area well worth visiting. Mid-August to November - This is a major waterfowl staging area, favoured especially by Mallards, Blue-winged and Green-winged Teal, Lesser Scaup and Barrow's Goldeneye. Winter - Probably one of the most interesting winter birding areas, the warm microclimate of the Cave and Basin Marsh supports a large number of wintering Mallards and Common Goldeneyes, as well as occasional Common Snipe, Killdeer and other winter rarities.

5. FENLAND NATURE TRAIL

Location: A half kilometer from Banff townsite adjacent the Mount Norquay road. There is a small parking and picnic area.
Habitat: Mature white spruce forest with a clear, peaceful stream winding through into a maze of willow and sedge marshes.
Birding: Late March to early May - This is a good place to look for early migrant flocks of Golden-crowned and Ruby-crowned Kinglets, Brown Creepers, Mountain and Boreal Chickadees, and Orange-crowned and Yellow-rumped Warblers. At moonrise there is a chance of hearing Great Horned, Barred and Pygmy Owls. Mid-May to early July - A birder who recognizes bird songs will be able to find mountain specialties such as Varied Thrushes and Townsend's Warblers during the early part of the season. The dawn chorus of American Robins, Swainson's Thrushes, Ruby-crowned Kinglets, Warbling Vireos, Orange-crowned, Yellow, Yellow-rumped and Wilson's Warblers, Common Yellowthroats and Song and Lincoln's Sparrows makes a short early morning walk on the Fenland Trail an enjoyable, if confusing, experience. Mid-August to early September - Mixed migrant flocks of warblers and sparrows forage in the willows and spruce trees along the trail. Winter - This is an excellent birding area at least for common species.

6. VERMILION LAKES

Location: Along Vermilion Lakes Drive, which starts west of Banff townsite at the Norquay Interchange and runs parallel to the Trans-Canada Highway for 4 km.
Habitat: The lakes are large, shallow water bodies connected by many small channels among sedge and willow flats. Mature White Spruce stands border parts of the lakes. More detailed descriptions of both the habitat and the wildlife on the Vermilion Lakes can be found in Vermilion Lakes, Banff National Park, An Introductory Study published by the Bow Valley Naturalists. (This publication is available from the Bow Valley Naturalists, Box 1643, Banff, Alberta TOL OCO, $3.75.) Many of the singular or unusual sightings for Banff are from the Vermilion Lakes area.
Birding: April to late May - This is probably the most important single area in Banff National Park for migrant waterfowl. As soon as open water forms along the lake edges in late April, flocks of the common species as well as occasional Whistling Swans, Cinnamon Teal, Northern Shovelers, Redheads, Canvasbacks, White-winged and Surf Scoters, and Hooded and Common Mergansers begin to arrive. Bald Eagles are seen regularly. Canada Geese nest along the lakes and frequently take over Osprey nests before their owners return. Late May to mid-July - An early morning walk or canoe trip can produce an impressive variety of bird species that breed in and around the lakes. Park rarities which occur here include American Bitterns and Red-necked and Pied-billed Grebes, Cinnamon Teal, Wood Duck (only once), Barred Owl, Pileated Woodpecker and Eastern Kingbird. Bald Eagles and Ospreys both nest beside the lakes. Mid-August to November - Starting with an accumulation of juvenile Mallards, teal, Barrow's Goldeneye in August, numbers of waterfowl using the Vermilion Lakes increases to a peak in the last half of September. Winter - Common Redpolls and Snow Buntings feed in the frozen marshes and lake edges, especially in early winter. American Dippers are almost always present at a small warm spring on Third Vermilion Lake, as are a few Mallards and Common Goldeneye.

7. MULESHOE PICNIC AREA

Location: On Highway 1A, 11 km west of the Norquay Interchange (19 km east of Eisenhower Junction). A parking and picnic area are located beside the highway, overlooking the Bow River Valley.
Habitat: Muleshoe Lake in an oxbow of the Bow River truncated by the CPR line. It is surrounded by a mixed vegetation of White Spruce/Balsam Poplar forest, willow shrubbery and sedge meadows. On the north side of the highway pure stands of aspen and lodgepole pine are interspersed with Douglas Fir forest and dry grassland.

Birding: April and May - On the river and Muleshoe Lake watch for such waterfowl as Canada Geese, Mallards, Harlequin Ducks and Common Mergansers as well as Spotted Sandpipers and American Dippers. Townsend's Solitaires, robins, Varied and Swainson's Thrushes can be heard singing in the evening and early migrants such as Ruby-crowned Kinglets, Orange-crowned Warblers, Yellow-rumped Warblers and White-crowned Sparrows are common in the willows and open forest along the river. Blue Grouse can be heard hooting on the slopes north of the highway. June to mid-July - Townsend's Warblers, Hammond's Flycatchers, Western Tanagers and Red-breasted Nuthatches breed in the Douglas fir and lodgepole pine forest on the slopes north of the highway. Common Yellowthroat, White-crowned Sparrow, Spotted Sandpiper, Common Merganser and five swallow species may be seen along the riverside. Warbling and Red-eyed Vireo, Pileated Woodpecker, Tennessee and Orange-crowned Warblers may be found in the aspen forest. The road crosses a wetland to the north of Muleshoe. Here, Brewer's Blackbirds, Lincoln's and Clay-coloured Sparrows, Willow and Least Flycatchers, Yellow and Orange-crowned Warblers, Western Wood Pewees and Cinnamon Teal have been seen.

8. SUNSHINE MEADOWS

Location: The Sunshine Road joins the Trans-Canada Highway 10 km west of the Norquay Interchange. From the parking lot at the end of the Sunshine Road, access to Sunshine meadows can be gained by the ski area gondola or by hiking up the ski out 5 km to the ski lodge. The meadows extend south and west of the ski area. It is easy to get lost so take a topographic map (Banff 820/4W).
Habitat: Rolling alpine heath with herb meadows in moist hollows and sparse mountain avens mats on the more exposed, rocky sites. Clumps and islands of subalpine fir and larch at timberline give way, at lower elevations, to solid stands of larch/fir forest.
Birding: June to late July - The meadows are still largely snow-bound in June, but those who are willing to exert the necessary energy are rewarded by bright, long days full of the songs of American Robins, Ruby-crowned Kinglets, Yellow-rumped Warblers, Water Pipits, Dark-eyed Juncos and Fox Sparrows. Later in summer the bird song drops off but most of these species, as well as Gray-crowned Rosy Finches, White-tailed Ptarmigan, Mountain Bluebirds and Townsend's Solitaires are readily found. Winter - Occasional ravens and Clark's Nutcrackers, Mountain and Boreal Chickadees, and White-tailed Ptarmigan are the only birds that remain in this high, snowy area all winter.

9. JOHNSTON'S CANYON

Location: On Highway 1A 23 km west of Banff (just east of Eisenhower Junction). Park at the Johnston Canyon trail head and follow the trail up Johnston Creek 3 km to the lower falls or 5 km to the upper falls.
Habitat: A narrow, shady canyon kept moist and cool by spray, surrounded by mixed spruce and lodgepole pine forest.
Birding: June to mid-September - Johnston Canyon is one of only two known breeding sites of the Black Swift in Alberta. The nests are difficult to spot, high on the slimy walls of the canyon, but the adults can be seen leaving the canyon in the early morning and returning near dusk. Dippers nest in the canyon, and the surrounding forest is a good area for Winter Wrens, Townsend's and Yellow-rumped Warblers.

10. BOW RIVER - BANFF TO LAKE LOUISE

Location: The Bow River parallels both Highway 1A and the Trans-Canada Highway from Banff townsite to past Lake Louise 58 km west of Banff. There are numerous access points to the river from both highways.
Habitat: A small river, brown with glacial silt until mid-July, that runs from riffle to pond to riffle through willow meadows and lodgepole pine and spruce forests.
Birding: Mid-May to mid-June - Harlequin Ducks gather along the Bow at this time of year before dispersing, the females to nest in small streams in the mountains and the

males to return to the Pacific Ocean. Watch for them on gravel bars and small islands, where you will also find American Dippers, Spotted Sandpipers, Bohemian Waxwings and Common Mergansers. If you are canoeing, please try to stay far enough away from waterfowl to keep from flushing them; as this is a popular canoeing river ducks may be disturbed several times daily, and this is bound to be hard on them during the breeding season. Winter - Occasionally a Mallard or Common Goldeneye may appear along the river in patches of open water, but the only bird that will consistently be found in winter is the American Dipper which winters wherever there are patches of open water.

11. VERMILION PASS BURN

Location: The Vermilion Pass fire of 1968 burned both sides of Highway 93 from near Boom Creek, 6 km south of Eisenhower Junction, to Marble Canyon in Kootenay National Park, 9 km farther south. Parking is available at Boom Creek, the Continental Divide and the Stanley Glacier trail head.
Habitat: Many of the trunks of the old forest are still standing, their feet lost in a tangle of fallen trunks and young lodgepole pines. Shrubs and herbs cover the whole area in a dense carpet.
Birding: June to mid-July - Northern Three-toed Woodpeckers, Olive-sided Flycatchers, Wilson's Warblers and Hermit Thrushes frequent the unburned forest along the edges of the burn. Inside the burn watch for American Robins, Mountain Bluebirds, Townsend's Solitaires, Dark-eyed Juncos and Chipping Sparrows. Hawk Owls nest in the burn and may occasionally be seen perched on dead spars, as can American Kestrels and Common Flickers. Blue Grouse, though uncommon, also nest here. Winter - Clark's Nutcracker, chickadees, Northern Three-toed Woodpeckers and White-tailed Ptarmigan may be found, and it is worth watching the tops of trees and dead spars for Hawk Owls.

12. MOOSE MEADOWS

Location: Adjacent to Highway 1A, on the west side, 25 km from Banff or 3 km south of Eisenhower Junction. Parking is available on the new gravel mine access road.
Habitat: A shrubby meadow of willows and dwarf birch with sedgy openings, bordered on all sides by lodgepole pine forest.
Birding: June to mid-July - The shrub meadows provide habitat for a number of species of limited distribution in Banff National Park, including Willow Flycatchers, Common Yellowthroats, Brewer's Blackbirds, Clay-coloured, Savannah and White-crowned Sparrows.

13. MORAINE LAKE

Location: The Moraine Lake road begins 1 km along the Lake Louise road from Lake Louise Visitor Service Centre and runs 9 km to Moraine Lake. Parking and picnic tables are available at Moraine Lake.
Habitat: Dense, mature subalpine fir/Engelmann spruce forest, with avalanche slopes above the Moraine Lake road and open, shrubby stream meadows below.
Birding: May - Any morning or evening the listener can stand in the snow and hear the songs of Varied and Swainson's Thrushes, American Robins, Hermit Thrushes and Townsend's Solitaires. June to mid-July - Watch for American Dippers and Harlequin Ducks along the lakeshore and in Moraine Creek. The creek meadows are a good place to look for White-crowned Sparrows, Ruby-crowned Kinglets and Spotted Sandpipers. A walk through the spruce-fir forest above the Moraine Lake road will produce Varied Thrushes, Winter Wrens, Townsend's, Yellow-rumped and Wilson's Warblers, Golden-crowned Kinglets, Boreal and Mountain Chickadees and Pine Siskins. Clark's Nutcrackers and Gray Jays are common in the picnic area.

14. BOW SUMMIT

Location: On highway 93 20km north of its junction with the Trans-Canada highway. There is a parking lot on the west side of the highway, with a trail that leads 1.5 km

to a scenic viewpoint at timberline; from there a loop trail follows the edge of upper timberline for 1 km.
Habitat: Open subalpine forest of subalpine fir and Engelmann spruce at the parking lot gives way to patches of timber and stunted fir with heath and herb meadows at higher elevations.
Birding: June to mid-July - This is a good place for an early morning walk to look for such mountain species as Varied Thrushes, Fox Sparrows, Hermit Thrushes and Clark's Nutcrackers. Those who spend enough time above timberline can expect to find White-tailed Ptarmigan, Water Pipits and Gray-crowned Rosy Finches. In the meadows below the summit look for Savannah Sparrows, Solitary Sandpipers, Water Pipits and Mountain Bluebirds.

15. MOUNT WILSON - AVALANCHE SLOPES

Location: 20 km north of North Saskatchewan River Crossing Visitor Services Centre, east of Highway 93. Park beside the highway and walk along the old road to the base of the avalanche slopes; from here it is a short bush-wacking expedition.
Habitat: Vertical strips of aspen forest extend up the steep slope, separated by grassy meadows and brushy tangles of young aspen, willow, rose, alder and other shrubs.
Birding: June to mid-July - This is the best place in Banff to find Dusky Flycatchers. Other avalanche slope species that occur here include Rufous Hummingbirds, Warbling Vireos and Orange-crowned and MacGillivray's Warblers. It is worth keeping an eye out for Golden Eagles in this area, too.

16. RAMPART CREEK - MEADOWS

Location: West of Highway 93 25 km north of North Saskatchewan Crossing Visitor Services Centre. Parking is available a short walk away at Rampart Creek Campground and Youth Hostel.
Habitat: Small, clear ponds surrounded by lush sedge meadows and scrubby willow growth, adjacent to the silty water and gravelly floodplain of the North Saskatchewan River.
Birding: June and early July - Savannah and White-crowned Sparrows and Ruby-crowned Kinglets are common, and Mallards and Barrow's Goldeneyes are regularly seen on the ponds. July to September - The ponds are always worth a careful check for migrant waterfowl; species such as Lesser Scaup, Ring-necked Duck, Lesser Yellowlegs, Solitary Sandpipers and other species stop here regularly during migration.

ARCTIC SPRING

by David Keenleyside

Arctic spring:
First flash of gulls against frozen sea,
Shrieks in soundless air.

Northern landscape:
Vistas of rose and mauve light
Shimmering on sea ice.

From "Marked by the Wild", reprinted by permission of The Canadian Publishers, McClelland and Stewart Ltd., Toronto

NATURALISTS' BOOKSHELF

VASCULAR PLANTS OF THE CONTINENTAL NORTHWEST TERRITORIES, CANADA

by A.E. Porsild and W.J. Cody. 1980. National Museum of Natural Sciences, Ottawa. viii + 667 pp., illus. $80.00.

The publication of a book on the vascular plants of the continental Northwest Territories has been long-awaited. To many of us who have worked in the area in the past, it has been a frustrating and often futile experience trying to key out plants using all manner of provincial, Alaskan, and even Arctic Archipelago floras. The arrival of this book, describing all the ferns, fern allies and flowering plants known to occur on the mainland portion of the Northwest Territories, fills a significant gap, bringing together many formerly scattered references. Both authors have worked extensively in the Northwest Territories and have come to know the flora well. This book represents many years of painstaking work on their part and it will have lasting importance in terms of northern botany. It will also serve as a continuing memorial to the late Dr. Porsild whose works have long been basic references for northern researchers.

The flora covers the 1112 species known to occur in the area plus additional species which may be expected. Line drawings are included for 978 species and distributional maps for all the native species. The line drawings and distributional maps are grouped together immediately following the descriptions of the species of each family. The distributional maps include all of Canada, Alaska and Greenland so it is very easy to get an idea of the broad distributional pattern of any particular species. Also included in the flora are descriptions of the six phytogeographic zones found in the area, a tabulation of families, genera and species, a generalized history of botanical collecting in the region, a selected bibliography, a glossary and an index. A few typographical errors did creep into the text (such as *Pericularis* instead of *Pedicularis* on page 531), but on the whole it is a remarkably clean and well-assembled book. The inclusion of numerous incidental details such as the use, edibility and general importance of some of these plants to northern natives and wildlife adds to the value and general interest of the book.

The book is clearly scientifically oriented, a must for all serious northern botanists, but non-specialists and those casually interested in northern botany should find it useful as well. I found the keys to be generally straight forward and workable with the species descriptions being generally adequate, although in a number of instance they appeared to be rather curt. The glossary and illustrations should greatly help those less familiar with botanical terms to use the book. It may be a matter of personal preference, but I would have like to have seen the illustrations and distribution maps interspersed with the text, rather than grouped at the end. This would save a lot of page flipping. However, it must be conceded that such a move may have complicated layout of the book, adding further to its already high cost.

This excellent new book should help stimulate greater interest in the flora of the continental Northwest Territories. Getting to know the flora is the first step in assessing distributional patterns and identifying potentially rare or endangered species. It would be disappointing if the high cost of the book discourages its purchase by nonprofessional botanists, for it is often from this source that much valuable information comes.

- J. Derek Johnson, Nor. Forest Research Centre, Environment Canada, Edmonton, Alberta T6H 3S5

FROM ARSENIC TO DDT: A HISTORY OF ENTOMOLOGY IN WESTERN CANADA

by Paul W. Riegert. 1980. University of Toronto Press, Toronto. xii + 357 pp. $30.00.

This book traces the history of entomology in Western Canada from the earliest recorded observations of explorers and fur traders, through the period of settlement in the late nineteenth and early twentieth centuries, and details the conflicts that arose between native insects and agricultural producers up to WWII. The author describes the hardships and frustrations, successes and failures of the various naturalists recruited by the Federal and Provincial Governments to investigate and remedy the problems which developed when farmers and insects began competing for the same space and resources in order to survive on the prairies and in British Columbia.

Dr. Riegert does an admirable job of chronicling the battles that were fought in orchards, gardens, field crops, pastures and stored product facilities through citation of written comments of farmers, entomologists and government administrators. Dr. Riegert has apparently spent much time delving into past records in libraries and provincial archives in search of the material presented in this book. It was fascinating to read that many of the control strategies developed well before WWII are still in use today such as area-wide control programs (Alberta Warble Control Program), grasshopper surveys and forecasts, and legislation (Alberta Pest Control Act). Many of the cultural control methods designed for implementation by producers are still valid today. However, the use of readily-available, effective and relatively inexpensive chemicals since WWII has pushed these cultural control methods into obscurity. With the ever increasing costs of petroleum-based insecticides, these cultural methods developed in the absence of an inexpensive arsenal of chemicals might once again become incorporated into the farming practices of western Canadian farmers.

Dr. Riegert describes the successes of the early British Columbia entomologists in the use of imported natural enemies to control several imported pests of fruits and ornamental trees. British Columbia entomologists also recognized the need for preventing exotic insect pests from entering that province, and helped develop quarantine legislation and fumigation facilities. The author provides detailed accounts of the wars waged against codling moth, San José scale, mosquitoes, ticks, earwigs, cutworms, grasshoppers, wireworms and wheat stem sawflies, to name a few. He points out that although the early entomologists spent a great deal of time investigating outbreaks, devising controls, and educating farmers on the use of these controls, time was available between some outbreaks to conduct in-depth biological and taxonomic studies on many of the pests.

With respect to prairie insect pests, the author devotes two chapters to grasshoppers, one to wheat stem sawflies, and one to cutworms and other lepidopteran pests. Detailed accounts are presented of the control programs organized in each province, outlining who and what was involved, where the battles were fought, and the costs and benefits resulting from the programs. The chapters on grasshoppers I found somewhat repititious with respect to descriptions of the programs and listing of cost figures for each of the outbreak years during the early twenties and thirties. The cooperation of federal, provincial and municipal governments, industry and farmers during these earlier outbreaks is still prerequisite to successful grasshopper control today.

The concluding chapters of the book deal with the development of specialization among the entomologists, and the development of entomological instruction in western Canadian universities. As more entomologists were recruited to investigate insect pests, more time was available for some individuals to direct their research activities

at one or two groups of insect of related pests, and gather more detailed information to aid in improving control strategies.

I found this book very easy to read, and would be enjoyable reading for entomologists and non-entomologists alike. Dr. Riegert has presented the historical sequence of recorded events from 1619 to the Second World War in such a way that an interesting and entertaining story of western Canadian applied entomology unfolds with each turn of a page. As an entomologist, I can look back with pride at the achievements of my predecessors as described in this book.

- H.G. Philip, P.Ag., Head, Entomology Section
Alberta Environmental Centre, Vegreville, Alberta

OCTOPUS BIG BOOK OF NATURE

by John Rostron, Mark Lambert and Keith Lye, Eds., 1981. Doubleday Canada Ltd., Toronto, Ontario 320 pp. $16.95.

Good children's natural history books, I've found, are hard to come by, if my recent Christmas shopping experiences are typical. The Octopus Big Book of Nature, a recent children's release, is an encyclopedic approach to the natural history of the world. It includes zoology, botany and minerology. The book is sturdily-bound and, on the whole, the illustrations are exceptional in both quality and number (2-3 per page). It is an attractive, colourful book.

However, there are minor but irritating errors throughout. For example, we are told of teal, *Anas crecca*: "Teals are expert fliers. Unlike other ducks they sometimes fly a zig-zag course. . . North American populations pass the winter in Central America". The Common Teal is merely a rare visitor to North America, and zig-zag flying is hardly unique to teal. *Falco sparverius* is called "American Sparrow Hawk" rather than "Kestrel". The Goshawk "inhabits wooded country in practically all of Europe and temperate Asia and is also occasionally found in North America". And sunflower producers will be surprised to discover that, according to the "areas of cultivation" distribution map, sunflowers are not commercially grown in North America.

The book was first published in Czechoslavakia and has been written from a European perspective, which can be confusing for North American readers. For example, we are told "in the woods in winter you may come across small flocks of tiny birds looking for something to eat. They are flocks of tits. . ."

Translation seems to have been a problem. There are occasional puzzling passages which are likely the result of meaning being lost in the translation. For example, "Bears. . . are true beasts of prey and even those which have been hand reared from the time they were cubs are not fit companions for man. The difficulty with bears is that poorly developed facial muscles allow hardly any facial expressions."

The concept of a broad introduction to natural history is lauable. For the average young reader, who will not pursue natural history in later life, the Octopus Big Book of Nature provides such an introduction, despite minor errors and apparent translating and editing problems.

- Virginia Young
R.R. #1, Busby, Alberta

[Reviews confirmed for the June issue of the Alberta Naturalist include: The Wading Birds of North America, by Karl E. Karalus and Allan W. Eckert; Caribou and the Barren-Lands, by George Calef; and The Rare Vascular Plants of Alberta, by G.W. Argus and D.J. White. - Ed.]

NEW AND RECENT RELEASES OF INTEREST TO ALBERTA NATURALISTS

WWF 1980-81 Yearbook. 1981. World Wildlife Fund. 512 pp. $14.95 (US) + $2.00 handling, specify English or French, WWF International, Yearbook Dept. "B", Gland 1196, Switzerland.

Diseases of Wild Waterfowl. 1981. by Gary A. Wobeser, Plenum Publishing Corp., 233 Spring St., NY, NY 10013. 325 pp. $47.40.

The Doomsday Book of Animals. 1981. by David Day. John Wiley & Sons Canada Ltd., Rexdale, Ont. 288 pp., 72 4-colour pages, 50 B&W; 300 species. $49.95 cloth.

The Mystery of Migration: The Story of Nature's Travellers Through the Cycle of the Seasons, by Dr. Robin Baker. John Wiley & Sons Canada Ltd., Rexdale, Ont. $29.95 cloth.

The Natural Landscapes of Canada: A Study in Regional Earth Science, by J. Brian Bird, 2nd Edition. 1981. John Wiley & Sons Canada Ltd., Rexdale, Ont. $14.95 cloth.

Wild Birds of Canada and the America's, by Terrence M. Shorrt. John Wiley & Sons Canada Ltd., Rexdale, Ont. $9.95 cloth.

The Audubon Society Handbook for Birders: A Guide to Locating, Observing, Identifying, Recording, Photographing & Studying Birds. by Stephen W. Kress. Charles Scribner Sons. $21.95 cloth.

Earthly Pleasures: Tales from a Biologists' Garden, by Roger Swain. 1981. Charles Scribner Sons. $14.50 cloth.

Audubon and His Journals, by M.R. Audubon, with notes by Elliott Coues. Introduction by Prof. William Goetzmann. 1981. Chelsea House. 2 vols., 1,100 pages. $19.95, paper.

OVERHEARD. . .

"It was slightly unnerving to open the gate into the wolf wood and push the wheelbarrow full of gory joints through the larch wood, tossing them out at intervals while the pack circled round and round you at a safe distance, and then rushing in in order of precedence to snap up the meat.

I remember one day when a little old lady watched me with bated breath as I wheeled my barrow through the wolf wood, tossing out the joints. As I cam out of the wood and locked the gate behind me, she approached me. "Excuse me, young man," she said, "but what sort of meat is that?" I was feeling in a particularly facetious mood and so, putting on my best poker face, I replied, "Keepers, Madam. It's an economy measure. When the keepers get too old to work we feed them to the wolves". Just for a slight second a look of incredulous horror spread over her face."

Submitted by Murray A. Tozer, from "Beasts in my Belfry" by Gerald Durrell

FAN NEWS

FAN ANNUAL GENERAL MEETING, CAMP CAROLINE

The Annual General Meeting of FAN was held January 29-31 at Camp Caroline. Although attendance was down somewhat from previous years, participants had an enjoyable and informative weekend, and much business was attended to. Our new Board of Directors were named, and are listed on the inside back cover of this issue. Following are excerpts from outgoing President Mary Lore's Annual Report:

"Three Board of Directors Meetings have been held since the 1981 AGM at which all important items of business were dealt with and appropriate action followed. I thank the Directors for their attendance, their reports and their participation in the decision-making process in order to conduct FAN's business regarding the environment.

Sincere appreciation goes to the hosting clubs, the Edmonton Natural History Club and the Lethbridge Naturalists' Society for the programs, field trips and general arrangements which are essential for a successful educational function. About 65 persons attended each function.

The Corporate Clubs brought FAN into being and through FAN, all clubs should be brought together and we think more club members should take advantage of the quarterly meetings and it would be nice if more club members supported FAN with a membership.

It is gratifying to have Calgary Field Naturalists' Society hosting the Canadian Nature Federation Conference in Calgary July 2-8/82 and to have the Buffalo Lake Naturalists, the Lethbridge Naturalists' Society, The Bow Valley Naturalists and the Edmonton Natural History Club joining in by hosting field trips. This certainly gives the guests to the conference an opportunity to view and learn about Alberta's environment.

We have ten standing committees, two appointed committees, thirteen appointed representatives as liaisons to other environmental committees who bring back pertinent information to FAN directors. We support one environmental co-ordinator along with the Alberta Wilderness Association, the Sierra Club and the National and Provincial Parks Association; she works full-time on our behalf keeping us abreast of environmental problems and submitting letters and briefs on our behalf.

Our paid member number is close to 600, being 560 at the end of December but it seems half of our members have a calendar year membership so renewals come in to the Treasurer in January. About 25 per cent of that number of memberships are subscriptions from libraries and schools. Our Publicity Director, Dorothy Dickson, launched a membership drive in November and a mailing went out to 1900 naturalists in Alberta who do not belong to FAN. Eric Tull, the Canadian Nature Federation vice-president for Alberta supported the drive with a letter. As of January 20, sixty memberships have resulted. The cost of the mailing was about $350.00. Robert Lister, who writes a Bird Column for the Edmonton Journal responded to the publicity director's request for publicity for FAN and the Edmonton clubs and the result to date has been sixty phone calls showing interest. So why are we not two thousand strong in membership? Are we not reaching those people who are interested? Are we too modest, do we not 'sell' ourselves to those who could be interested?

The profile application for grants was honoured by the Provincial Government in the amount of $6600.00. A large share of this must be used to pay for the publications which FAN issues. We are grateful to this provincial government for their support in the work that we are doing in environmental education, leadership and publications.

In the area of publications, it was a banner year. Four fine issues, plus a supplement of scientific research data and then two special issues - Bird Banding issue and the Historical issue. A great deal of appreciation goes to our former Editor, Dr. Martin McNicholl, Dave Ealey, Pat Clayton and Evangeline Case for the time involved in soliciting articles, assembling, proofreading and typing. A very special thanks has been extended to Martin on behalf of the FAN President. All of those who contributed to the special issues and particularly the Historical issue deserve recognition for their research which has resulted in interesting and valuable articles. Dr. Grant MacEwan has commented that the Historical issue is special and a credit to FAN. Dr. Timothy Myres has stated the issue is 'special'. Now we are interested in selling the surplus - Bird Banding is $3.50, mailed, and the Historical issue is $7.00, mailed. Does your library have a copy? Do your friends and relatives who are interested have a copy?

As for public relations, I hope we continue to improve the image of naturalists in the eyes of the public. I feel we have made much progress over the past eleven years. I am glad the founders made the effort to organize FAN as it certainly serves a useful purpose by providing the government with information on many issues, as well as informing other groups and individuals. However, I feel we need to promote ourselves a little bit more; we are too modest sometimes. We are concerned about environmental issues and we should be concerned about People too!

Environmental education is still the answer to the future. I would recommend that clubs could avail themselves to this opportunity to visit schools, or assist with school field trips, which could result in a tremendous contribution to students. Lethbridge have set a very good example.

I have learned much being President of FAN and I have done my best for FAN. I wish my successor the continued support you have all given me during my term of office. Thank you."

Following is the Wilderness, Parks and Natural Areas Committee report presented by Chairman Mike McIvor at the AGM. Summaries of other committee reports and resolutions passed, as well as other business, is not available at this time and will be presented in the June issue of the AN.

COMMITTEE REPORT: WILDERNESS, PARKS AND NATURAL AREAS

Ecological Reserves: The Wilderness Areas Amendment Act obtained royal assent on December 2, 1981. This means that Ecological Reserves and Natural areas will now be part of our provincial system of legislatively protected lands. We must now work to ensure that a viable land base is acquired to fulfill the mandate of this new legislation.

Provincial Parks: There is a new brochure for Alberta Provincial Parks listing these parks and their classifications. It appears that several parks have been classified according to their present uses rather than the best possible use which should be what dictates future management planning. Corporate member clubs and interested members should send for this brochure and examine its positions critically.

Kootenay Plains: We hope this will be one of the first Ecological Reserves designated under the new legislation. Proponents of the Odyssey continue to push for final acceptance of their resort. FAN remains a strong supporter of A.L.E.R.T. in this struggle to require that development in Alberta's East Slopes be environmentally appropriate. This issue has pointed out the need for regulations to accompany our East Slope Policy. There should be prescribed and proscribed uses for each zone. Also, there has been talk in government circles of David Thompson Country which would be this areas' answer to Kananaskis Country in terms of massive recreational development. However, the completion of an Integrated Management Plan should precede further consideration of David Thompson Country. FAN has continued to be active in dealing with national parks issues, some of which are still current.

Sunshine Summer Use: FAN submitted a brief outlining our feeling that summer use of the Sunshine meadows should minimize environmental impacts on this important but fragile resource, and enhance the visitors' perceptions of the kind of quality landscape that national parks are intended to preserve.

Trans-Canada Highway Twinning: FAN participated in the E.A.R.P. Hearings on Phase 2 of this project in Banff National Park. We recommended that a delay occur between Phase 1 and Phase 2 so that the efficacy of various wildlife mortality migigation measured may be judged. We also stated that we need, as a society, to take a much longer view of our futures. This issue of a national transportation route requiring expansion in a national park is a classic illustration of the sorts of conflicts into which our growth-oriented way of life is propelling us.

Lake Louise and Marmot Basin Ski Areas: These ski areas in Banff and Jasper National Parks respectively have both put forward long term development proposals. The planning process in both cases has just begun.

Wood Buffalo National Park: Dave Ealey and Myrna Pearman have been working on the management planning for Wood Buffalo. We are presently at the stage where alternative plans are being considered. These alternatives range from the most preservationist to the most facility development oriented. It is imperative that we keep demonstrating to Parks Canada our conviction that the ultimate value of our national park system must be protected.

The Four Mountain Park Block Planning Program: The public elements of this planning program will be underway very soon. This is an extremely important process and all clubs and members are urged to participate.

FAN MAY MEETING - MAY 22-24

The May FAN meeting will be held at the ranch of Harvey Gardner, 6-1/2 miles north of Chain Lakes Provincial Park west of Nanton. (From Highway #22/Secondary #922 watch for signs about 17 mis. S of Longview). Individuals must supply own food and accommodation (campers, tents, etc.). The nearest motel accommodations are in Nanton. Brings weiners, buns et al for a community weiner roast!

Numerous field trips in this interesting part of the province are planned. An evening program will feature Gordon Cartwright on grazing management relative to compatability with native species. If you want additional information telephone Harvey (646-5807). Should be a good week end, and we hope to see you there.

FAN SUMMER FIELD OUTING

There is no organized FAN summer field outing this year and, in lieu of such, we suggest FAN members and corporate member board of directors attend the Canadian Nature Federation Conference in Calgary, July 2-10, 1982. Details are elsewhere in this issue.

ROBERT LISTER NAMED HONORARY MEMBER OF FAN

The Federation of Alberta Naturalists has selected Robert Lister, of Edmonton, to be an Honorary Member of the Federation in recognition of his great contribution to natural history. Robert was for many years assistant to the late Professor William Rowan, and has written several scientific papers and a book on the birds and birders of Beaverhills Lake. He is best known for his bird column in the Edmonton Journal, a feature which has opened the eyes of many readers to the wonders of nature. He has been recognized previously for his important contributions by both the Edmonton Bird Club, which he assisted with the founding of in 1948, and the Edmonton Natural History Club.

Robert Lister joins Drs. J. Dewey Soper and Kerry Wood and Professor W. Ray Salt as FAN's Honorary Members.

ALBERTA ORNITHOLOGICAL RECORDS COMMITTEE

The AORC has been operating as a committee of FAN since 1972. Recently, its objectives have been updated to include:

1. the systematic and comprehensive gathering and storage of data regarding Alberta birds from amateurs, professionals and published records;
2. the analasis and synthesis of data for specific short-term projects as well as for ongoing projects, including the assessment of unusual observations;
3. the publication of a quarterly newsletter and publications relating to specific projects;
4. the promotion of bird research projects by amateurs and professionals; and
5. the promotion of liaison between laymen and the scientific community.

In order to accomplish these, volunteer efforts as well as extra funding for paid positions is required. The person(s) in these positions will be responsible for the coordinating of the following functions:

1. Establishment of a Communication Network. This will be achieved by compilation of a file of potential participants (resident birdwatchers, biologists, naturalists, etc.) to contribute bird records. The AORC will also coordinate national and international reporting of Alberta records, for example American Birds, and keep in touch with other societies on matters relating to birds.
2. Record Gathering, Assessment, Storage and Retrieval. Records will be obtained from literature, files and other sources. These will be assessed and entered into a computer storage system, allowing retrieval of data by location or species. Access to information by all researchers will be encouraged. The data base should be valuable in basic research and resource inventory, planning and management.
3. Organization and Coordination of Bird Counts and Other Projects. The AORC will provide leadership for coordinating annual bird-related projects, for example, Christmas Bird Counts. This will include promoting counts in seldom studied parts of the Province.
4. Publication of Summaries. The publication of summaries of the data by season and calendar year will be the main voice of the AORC through the Alberta Bird Record. A rundown of seasonal influences and climatic events affecting the sightings; announcements of interest to avian biology; and articles of particular relevance to the Alberta scene, including techniques for improving the abilities of observers, interesting birding areas, and the biology of certain species, will be added to the journal. In addition, the AORC will publish reports based on the special projects. Subscriptions to the Alberta Bird Record will help to defray costs of publishing.
5. Record Verification. The AORC will continue to establish accuracy standards for reporting birds. Description evidence will be sought for all reported observations of rarities, first birds for certain areas and hard-to-identify species. Each will be judged on its own merits by knowledgeable persons within the AORC or, if necessary, by outside experts.

Proposed Projects:

1. The Alberta Bird Atlas project will map the distribution of each bird species in Alberta according to a grid of small census units of the U.T.M. (Universal Transverse Mercator) system. The AORC will coordinate the recruiting of volunteers and the reporting system in cooperation with naturalists' clubs, available independent people and government agencies. The project work will be a type of activity that birdwatchers of all kinds can 'sink their teeth into', involving the recording of basic field observations that will be put to important use.

2. The coordination and research and analysis of data for documenting patterns of bird migration in Alberta and for determining major routes, timing, locations of staging areas and critical habitats.
3. The assessment of status for rare, endangered, or threatened birds, and defining potential strategies for protecting certain species and their habitats.
4. The definition and location of valuable or unique bird habitat and the recommendation of protective measures to the appropriate management agencies.
5. The coordination of research and analysis of data for defining winter bird distribution patterns, including an assessment of timing and relationships with habitats.

Funding for the activities of the AORC is now being sought from private agencies and government. Persons interested in subscribing to the publication, participating in the projects, submitting records, or contributing to this program should write: AORC, c/o Al Wiseley, 202-635-56 Ave. SW., Calgary, AB T2V 0G9.

- C. Wallis, C. Wershler and A. Wiseley

CLUB NEWS

ALBERTA SPELEOLOGICAL SOCIETY

The Alberta Speleological Society held it's 1982 Annual General Meeting on 5 December 1981 in Edmonton. Among the topics discussed were the Great Divide Trail and the issue of cave management. It seems we are being successful in our attempts to have the course of the trail modified to avoid cave areas. We will continue to work informally with the trail designers. Maryhelen Posey volunteered the assistance of FAN to the ASS regarding the matter of cave management, a matter which so far has usually meant the gating of and denial of free access to caves. The Federal Government and the ASS do not see eye-to-eye on this issue. It was noted that the issue was not currently being actively contended and decided that a sleeping dog should not be disturbed.

- Submitted by Randy Spahl

BOW VALLEY NATURALISTS

The January meeting featured Charlie Hunter's presentation about India; February Bob Smith provided a slide show on Revelstoke National Park as well as tips on outdoor photography.

BVN submitted a brief on Phase 2 of the proposed TCH project to the E.A.R. Panel on January 14 in Banff. While generally supporting the design for Phase 2 the brief urged construction be accelerated and that a full assessment of the Phase 1 project be completed before Phase 2 construction begins. We asked DPW to consider reserving the maximum possible area in the Vermilion Lakes section for interpretation and sightseeing and we emphatically opposed linking existing Vermilion Lakes road with the Bow Valley Parkway. Finally, we asked that studies by done to address the problems arising from inevitable habitat loss and disruption in the Bow Valley.

CALGARY FIELD NATURALISTS' SOCIETY

We have had good turnouts for our meetings this winter and enjoyed talks on flowers in the Rockyford area (Edith Kathol) and ravens (Dr.R.N. Brown) and a

Member's Night which was interesting and fun. We are looking forward to learning about permafrost and ice caves (Dr.S.A.Harris) and snow geese (Judy Smith) in January and February. We have had some field trips each month and, on December 20, 44 members turned out for the Christmas Bird Count which produced a record 56 species including shoveler, glaucous gulls, house finch and white-throated sparrows!

While some former members have dropped out this year, the loss has been balanced by new members so our numbers remain at about 250 (including families). We are pleased to welcome several naturalists from other parts of Canada who have come to make their homes in Calgary and look forward to familiarizing them with our area through talks and field trips.

We have added a second page to our monthly newsletter to include monthly observations of note. Our thanks go to Doug Collister for doing the compilations and editor Jean Gill for coping with the extra work involved. Because of the mild weather before Christmas, late bird observations were notable this winter and included grebes, ducks, herons, shorebirds, gulls, flycatchers, catbirds, pipits, warblers, robins and sparrows.

We are pleased to have a particularly active Bird Study Group this year under the Chairmanship of Dr. Jack Steeves and wish them luck with the several projects they have undertaken.

Moving our Audubon film series to the University is proving a success with reduced costs and increased attendance.

Did you remember to mark July 2-10 on your 1982 calendar for the Canadian Nature Federation Conference? We are working to make it a good one, so do plan to come!

- Dorothy Dickson

EDMONTON NATURAL HISTORY CLUB

Edmonton Natural History Club meetings are held the second Tuesday of the month at 8:00 pm in the Provincial Museum Auditorium. The fall program included noted artist Robert Bateman in October, Cam & Joy Finlay in November, and Derek Johnson in December. The January AGM was a Member's Night, and featured the award of the Loran L. Goulden Memorial Award as well as club business. In February Ian Stirling, CWS, spoke on arctic fauna.

In addition to holding interesting monthly meetings, the Edmonton Natural History Club has an active field trip program and is involved in the presentation of Audubon films at the Museum.

RED DEER RIVER NATURALISTS

The Annual General Meeting in January featured not only the election of a new Executive, but an interesting 2-perspective Look at Habitat, by Earl Stamm, Ducks Unlimited, and Peter Lee, Provincial Government biologist. Winter field trips have included a ski/snowshoe trek along the Blindman River in January and a cross-country ski weekend in Banff National Park.

The Red Deer River Naturalists have presented an impressive brief regarding the overall planning of Red Deer Urban Park System. Concerns addressed include preserving the integrity of the Hoopfer Property; preserving the Gaetz Lake area as a wildlife sanctuary with an eye toward future development of an educational nature sanctuary; more careful consideration of routing of city bicycle paths to avoid certain, more environmentally-sensitive and currently inaccessible areas; minimizing motorized recreation in city parks by aiding such interest groups in purchasing land specifically suited to trailbiking/snowmobiling; and potential effect of water levels in the Red Deer River when the RDR Dam, now under construction, is completed. The brief concludes: "Finally, we would point out that a very short time has been provided to us to organize information and opinion that we feel is vital to rational development of a park plan that will ensure the survival of the already hard-pressed natural flora and fauna of the area. Therefore, we would ask that a mechanism for a continuing

dialogue be established between the Urban Park Planners and the Red Deer River Naturalists so that we can assist in the extremely complex task of trying to provide people with access to a natural environment but in an Urban Park setting."

CONSERVATION NEWS

A NATIONAL WILDLIFE POLICY FOR CANADA: NOTES FROM THE FEDERAL/PROVINCIAL WILDLIFE CONFERENCE, JUNE 23-26, 1981

by David M. Ealey

I attended the Forty-fifth Federal/Provincial Wildlife Conference held in Charlottetown at the invitation of the Fish and Wildlife Advisory Council and as a representative for FAN. The theme of the conference was "A National Policy on Wildlife - Phase II". Its purpose was to bring together a diverse assemblage of wildlife management directors, ministers, representatives of wildlife resource users, and representatives of environmental conservation groups to discuss matters of wildlife management concern, particularly the National Wildlife Policy. Other sessions were important, especially from the point of view of natural history organizations, but the key sessions were those during which the federal and provincial wildlife directors took turns at the wildlife policy.

The policy is long on motherhood statements and full of problematical jurisdictional inconsistencies. Most wildlife divisions in Canada were not set up to recognize wildlife in as broad a manner as presented by the Policy. According to this Policy, wildlife includes all species of wild plants and animals. Several of the wildlife directors pointed out that this all-encompassing definition would be impossible for them to carry out to the letter, partly because of the great increase in numbers of species, but also because of the perceived overlap between government departments. For example, the Department of Forestry is currently in charge of forest inventory for use and the Department of Agriculture concerns itself with the elimination of insect and vertebrate pests. This should not, in itself, prevent a national policy from advocating wise use of and perpetuation of a wildlife resource, although in practice each area of jurisdiction would have to be attributed to the appropriate provincial department for management.

Three goals are stated in the draft policy: (1) To maintain essential ecological processes and life-support systems upon which Canadians and Canadian wildlife depend; (2) To preserve the genetic diversity of wildlife upon which essential ecological processes depend; and (3) To ensure that the use of species and ecosystems is sustainable.

Eight guiding principles accompany the above goals to form the framework for the draft policy. These principles are: (1) Wildlife is an integral component of the environment within which Canadians sustain and enhance their lives; (2) The way in which land is managed determines the quality and quantity of habitat upon which wildlife depends; (3) The maintenance of natural wildlife stocks must always take precedence over any particular human use of them; (4) Wildlife is a common property resource held in public trust; (5) All Canadians have the right to enjoy and use wildlife throughout Canada, subject to regulations aimed at securing its sustainable use; (6) The use of wildlife for economic gain is a privilege; (7) The cost of management essential to conserving wildlife should be borne by all Canadians; special management measures required to permit intensive uses should be supported by the users; and (8) Conservation of wildlife depends upon a well-informed public.

The remainder of the Policy deals with recommended actions. Briefly stated, these recommendations are: (1) Adopt a broader, uniform definition of wildlife; (2) Adopt comprehensive conservation policies; (3) Involve the private sector; (4) Improve the basis of wildlife management; (5) Ensure maintenance of wildlife habitat; (6) Protect native ecosystems; (7) Maintain optimum wildlife populations; (8) Ensure the wise and responsible use of wildlife; and (9) Participate in international conservation.

Overall, the draft Wildlife Policy for Canada is a very ambitious, and long overdue, document. With the input from the Canadian Nature Federation and other environmental groups, the Policy has improved substantially. Naturalists will continue to have input through CNF during the preparation of the final draft of the Policy. I believe it is important that other naturalists (who should care enough) show support for the development and implementation of the Policy when a final copy becomes available. In the meantime, anyone interested in looking at the Draft Policy should contact myself through the FAN mail box and I will forward a copy.

Another issue of importance to naturalists is the development of a program to promote humane trapping in the Canadian fur industry. David Neave of the Alberta Fish and Wildlife presented the report of the Humane Trapping Committee, as its chairman. The major points and recommendations he made were as follows: (1) Canada is a world leader in new, humane trap technology. (2) Humane trapping is possible and will be actively encouraged, but it will take a long time, perhaps a decade, for substantial turnover to a system of humane trapping to occur. Part of the process will require training of trappers and further research into humane trapping techniques. (3) A Fur Institute to oversee development of the fur industry in Canada was recommended.

Acid rain was the subject of a major session, but despite the intense concern for the problem, there was little reassurrance that any progress is being made in way of a resolution, especially in the area of international regulation with the United States. Some depressing figures were presented; approximately 9 million tonnes of SO_2 and 4 million tonnes of NO_x fall on Canada each year. A large portion of this total comes from automobile exhaust and home heating fuels. Obviously, the large industrial facilities are major sources of pollution that can be more easily identified and controlled. More effort must be spent on reducing the pollutants coming from small sources, as well. For example, every time a car owner allows his catalytic converter to burn out and fills up his vehicle with cheaper, regular gas, he is only fooling himself and abusing the air that all of us breath.

A draft report on the protection of wildlife habitats in Canada was also presented. This is a very unfinished document; the aims are sound and would go hand-in-hand with the National Wildlife Policy eventually. The bureaucrats voiced strong criticisms of the document, primarily because it presumed too much and was not politically discrete. Such problems can hopefully be cleared up for the next draft and the protection of wildlife habitat of a national concern can then be promoted.

Finally, of particular interest to naturalists should be the proposed socio-economic survey of wildlife use and appreciation in Canada. A questionnaire has been developed by the Canadian Wildlife Service and will be used in a Canada-wide survey in 1982. The Canadian Nature Federation and other environmental non-government groups reviewed early drafts and suggested changes that dealt with non-consumptive types of wildlife use. The successful completion of this survey should be of immense interest to naturalists because it will outline clearly the importance and value of wildlife to Canadians. The results are likely to present one of the best possible causes for wildlife conservation.

CANADIAN NATURE FEDERATION NEWS

CANADIAN NATURE FEDERATION CONFERENCE, CALGARY, JULY 2-10

The Canadian Nature Federation 1982 Conference is being held in Calgary. The theme of this conference is "Resources and Reserves", which will be carried out through 17 field trips and 16 presentations by noted speakers.

Conference Program

All events take place on the University of Calgary campus and are free to conference registrants. Parking is readily available. The program presents four symposia representative of Alberta's rich diversity of natural resources and some of the current conflicts facing those responsible for their management.

Monday, July 5

9:00 am Greetings and opening of conference

9:30 am Stewardship of Alberta Resources

A. The Land: Chairman - M.T. Myres; Alpine meadows - George Scotter; Eastern Slopes - John Stelfox; Effects of acid rain in Western Canada - Rick Pratt; The tar sands - Stu Smith.

1:00 pm Rivers: Chairman - Mary Lore; Biogeography of Alberta rivers - speaker to be announced; The Red Deer River - Dorothy Broadbent; Inter-basin water transfer - John Eisenhauer.

Tuesday, July 6

9:00 am Ecological Reserves: Chairman - W.A. Fuller; The Canadian Perspective - David Fowle; British Columbia - Bristol Foster; Research use of ecological reserves - speaker to be announced; Alberta - Diane Griffin.

2:00 pm The Rocky Mountain Region: Chairman - David A.E. Spalding; The glacial history - Nat Rutter; Periglacial fauna - Val Geist; Biophysical inventories - Geoff Holroyd; The high country - Mike McIvor.

Social Events

Naturally you are interested in the opportunity any conference offers to meet other naturalists informally and keep up to date with people and places you have known from past conferences. We anticipate providing you with ample time for such light relief - and with a local flavour!

Banquet: This is the highlight of the program, occurring at the end, of course, July 6, 1982. Presentation of CNF awards, draw for door prizes, introduction of CNF Executives, and a lively talk on wildlife re-introductions by Stephen Herrero.

Social Hour: July 4, 1982 - A chance to rest after the first series of field trips and before the symposia - an informal presentation on the Milk River by Cleve Werschler and Cliff Wallis.

Entertainment: July 5, 1982 - After the AGM, join us for a social evening with square dancing to get the adventurous into a Stampede mood; there will be squares of demonstration dancers and a caller to help anyone who wants to learn! Cash bar.

Children's Program

July 5 and 6 - We are happy to offer a children's program for each of the two days of the conference. Visits to Heritage Park, the Calgary Tower, the Glenbow Museum, the Devonian Gardens, the Calgary Zoo's endangered species tour, Fort Calgary, and the Calgary Centennial Planetarium are among the activities. We promise a different

program each day; the selection will be based on the numbers and ages registered. The program is open to children between 5 and 12 years of age; the fee includes admissions, lunch and all transportation. Older children who wish to help on the tours should indicate it on the registration form; a certain number may be asked to participate, for free. Cost per child: one day, $20, two days, $30.

Field Trips

To enjoy the full flavour of Southern Alberta we recommend at least one prairie and parkland trip, and one foothills and mountain trip. By including the Edmonton trip you will add a corner of the boreal forest. Trips are hosted by naturalists' groups in various parts of Alberta where noted, and the remainder by the Calgary Field Naturalists' Society. Registration is on a first come, first serve basis. In the event that trips are oversubscribed, it is possible in some cases to arrange additional trips. However, it is not realistic to expect this after the early bird registration date of June 1, so everyone is urged to get their registrations in early.

Although the conference in total runs from July 2 to 10, the symposia and other major events take place in Calgary July 5 and 6. The greatest number of field trips have been scheduled to take place before July 4 or after July 6.

Costs given are for transportation only, with an additional charge for motels on the 2 and 3-day trips. The motel costs, which are per room, based on double occupancy, are to be paid at the motel and are subject to change. There is space on your registration form for those of you who wish us to make your accommodation arrangements. Meals are also extra. Box lunches (at a cost of about $4 each) will be available from the University for the Calgary trips and for the first day of trips starting in Calgary. Space has been added to the registration form for those of you who wish to have a box lunch.

You will notice that there are no trips scheduled to Banff National Park. This was done deliberately to avoid taking extra people to an already crowded area. However, you may wish to visit Banff before or after the Conference as individuals, or to join one of the many existing tours in the park. Banff has excellent visitor services available to naturalists.

Participants should equip themselves with suitable clothing and footwear, band-aids, suntan lotion, sunglasses and other protective personal effects sufficient to sustain comfort during extended periods of activity in a wide variety of weather and temperature conditions. Note: those participating in the caving field trip need not provide their own specialized equipment.

Pre-Conference

Long-distance trips:

A. July 2 and 3 - Waterton Lakes National Park and adjacent foothills, hosted by the Lethbridge Naturalists' Society. Scenic two-day trip that will include prairie, foothills and mountain terrain. A choice of hikes to enjoy mountain flowers, some of which are found only in this part of Canada. Visit a foothills guest ranch. Limit: 30. Cost: $55 plus motel at Bayshore Inn in Waterton ($63).

B. July 3 and 4 - Buffalo Lake environs, hosted by the Buffalo Lake Naturalists. A two-day trip to the heart of Alberta's Parkland Country. Includes the Battle River and the Red Deer River badlands, their flora and fauna; strip mining reclamation; local western museums. Limit: 30. Cost: $50 plus motel in Stettler ($37).

Longer day trips outside Calgary:

C. July 3 - Kananaskis Country, hosted by the Bow Valley Naturalists. A day trip along Kananaskis Valley adjacent to Banff National Park. Part of the day will be spent in an alpine meadow. A look at the beauties and the conflicts of this portion of the eastern slopes in the Rockies. Limit: 30. Cost: $25.

D. July 4 - Same as item C.

E. July 3 - Irricana Sloughs. A tour of some of the best prairie sloughs, led by members of Calgary's Bird Study Group. Limit: 20. Cost: $12.

F. July 4 - Prairie lakes and creeks. An all day trip to the prairies east of Calgary,

with stops at several of the larger prairie lakes for birds, and native prairie creeks for flora and fauna. Limit: 20. Cost: $12.

G. July 4 - Brown-Lowery Natural Area. A 2-mile nike through deciduous and coniferous woods in Alberta's foothills ending up at a ridge with prairie flowers and a breathtaking view of the foothills. Limit: 20. Cost: $10.

Short day trips within Calgary:

H. July 2 - Fish Creek Provincial Park. An in-depth look into what makes one of North America's largest urban parks so special. Includes an environmental centre and Calgary's only Great Blue Heron colony. Limit: 20. Cost: $8.

I. July 3 - Natural areas of Calgary. Experts will be on hand to lead. Includes riverine forest habitat, open prairie habitat, plus Calgary's only Douglas firs. Limit: 20. Cost: $8.

J. July 4 - Sam as item I.

During Conference

K. July 5 - Early morning bird walk led by members of Calgary's Bird Study Group. No limit, no charge.

L. July 6 - Same as item K.

Post Conference

Long-distance trips:

M. July 7 and 8 - Dinosaur Provincial Park and Lake Newell. Park staff at this World Heritage Site will lead us into the badlands. We will visit white pelican and cormorant habitat at Lake Newell. Limit: 35. Cost: $50 plus motel in Brooks ($50).

N. July 7-9 - Natural areas in the vicinity of Edmonton, hosted by the Edmonton Natural History Club. Includes Wagner Bog, an example of boreal forest where at least nine

Registration Form

CNF Conference - July 2 to 10, 1982 inclusive

Name _____

Address _____

_____

Postal Code _____ Phone _____

Name of spouse (if attending) _____

Children & ages (if attending) _____

Fee before June 1, 1982: _____ persons @ $30 ea. $_____

Fee after June 1, 1982: _____ persons @ $35 ea. $_____

****

Banquet

Reserve _____ places at $20 ea. $_____

Include children in this calculation

****

Children's Program

Reserve _____ places for one/two days of children's program.

Ages: _____ Day: July 5/July 6

Fee for one day program: $20 ea. $ _____

Fee for two day program: $30 ea. $ _____

Volunteers with Children's Program

No. who would like to assist _____ Ages: _____

Field Trip Registration

		Accommodation?	Box Lunch?
A	@ $ 55 = $_____	☐ yes ☐ no	☐ yes ☐ no
B	@ $ 50 = $_____	☐ yes ☐ no	☐ yes ☐ no
C	@ $ 25 = $_____		☐ yes ☐ no
D	@ $ 25 = $_____		☐ yes ☐ no
E	@ $ 12 = $_____		☐ yes ☐ no
F	@ $ 12 = $_____		☐ yes ☐ no
G	@ $ 10 = $_____		☐ yes ☐ no
H	@ $ 8 = $_____		☐ yes ☐ no
I	@ $ 8 = $_____		☐ yes ☐ no
J	@ $ 8 = $_____		☐ yes ☐ no
K	@ NC = NIL		
L	@ NC = NIL		
M	@ $ 50 = $_____	☐ yes ☐ no	☐ yes ☐ no
N	@ $ 75 = $_____	☐ yes ☐ no	☐ yes ☐ no
O	@ $100 = $_____		
P	@ $ 25 = $_____		☐ yes ☐ no
Q	@ $ 8 = $_____		☐ yes ☐ no

Total (Field Trips): $_____

****

TOTAL (Fee, banquet, children's program, trips) $ _____

This amount due with registration form.

Have you sent an accommodation form to the University of Calgary?

☐ *yes* ☐ *no*

Send this form with your Registration Fee to:

CNF Conference
P.O. Box 981
Calgary, Alberta
T2P 2K4

species of orchid grow; Beaverhill Lake, one of the best birding spots in Alberta; Elk Island National Park, the parkland park of Canada, a bison sanctuary; and the Clifford E. Lee Nature Sanctuary. Limit: 30. Cost: $75 plus motel in Edmonton ($38).

O. July 7-10 - Crowsnest Caves. A four-day round trip from Calgary to visit two of the interesting caves in this area, hosted by the Alberta Speleological Society. All food, special equipment, transportation and a guide will be provided; this trip involves overnight backpacking. The caves are not dangerous, merely strenuous - especially with top-notch guides like ours! Limit: 10. Cost: $100. [Note: weather conditions in the area occasionally preclude caving, even in July; if it is necessary to cancel the trip you will be notified as early as possible.]

Longer day trips outside Calgary

P. July 7 - Plateau Mountain. A unique "top of the mountain" experience for botanists. Also unusual because of permafrost effects on the landscape. Limit: 30. Cost: $25.

Short day trips within Calgary

Q. July 7 - Fish Creek Provincial Park (same as Item H).

How to Register

Please fill in the required information on the Registration Forms on the previous page. Total the fees for each section; add these subtotals; and send the form, with this amount, to the address indicated on the form. *Please note that the Registration Form and the Accommodation Reservation Forms which follows are to be mailed to different addresses.* Extra Registration Forms may be obtained from CNF, 75 Albert St., Suite 203, Ottawa, Ont. K1P G61.

Cancellations, Schedule Changes and Refunds

The Calgary Field Naturalists' Society reserves the right to cancel events or to make other adjustments at any time in response to insufficient participation, bad weather or other reasonable causes not within its control. Refunds for any prepaid event will be made in full prior to June 1, 1982. No refunds after June 1.

Accommodation

Rooms will be available to conference registrants for the nights of July 1 through July 6 in the University of Calgary Residences, which are very conveniently located for the social events and meetings. Free parking is provided for those staying in the Residences. Charges for accommodation are determined annually in April; a deposit of $22/night for single rooms and $16.50/night/person for double rooms is required. Any difference, in either direction, between the deposit and the actual charge is to be made up at the conference. *Please note that if you require accommodation prior to July 1 or after July 6 you must make arrangements elsewhere.* To reserve accommodation at the Residences, fill in the Accommodations Form (next page) and mail it to the address on the form. Remember to specify which nights you will require accommodation.

Facilities Available

Meals may be purchased at any of several restaurants on campus. The swimming pool and other gymnasium facilities are available to conference registrants, during usual non-student use periods. There is a $1/person/day charge for the facilities pass, available at the Physical Education Building. A number of parking lots for those not staying on campus will be about $1/day. The bus service to the campus from other parts of Calgary is excellent.

CNF Bookshop and Other Displays

The CNF will bring a large selection of reference books, field guides and gear for both the armchair and the active naturalist. In addition, local naturalist publications will be available. A wide variety of exhibits will be on view, representing several government and private agencies.

Accommodation Reservation Form

University of Calgary Student Residences

Canadian Nature Federation Conference July 2 to 10, 1982

Name _____

Address _____

_____

Postal Code _____ Phone _____

No. in party: _____

Accommodation required for the night(s) of:

July 1☐ July 2☐ July 3☐ July 4☐ July 5☐ July 6☐

The actual charges at the University residences will not be fixed for next summer until April; the University requests a deposit of: **$22/night for a single;**
$16.50/person/night for a double.

Should there be any difference between the amount of the deposit and the amount of the actual charge, it will be made up at the time of the conference.

Send this form with your deposit to:

Mr. Guy Cruse
University of Calgary Residences
University of Calgary
Calgary, Alberta
T2N 1N4

NOTES AND NEWS

ALBERTA SITE NAMED TO WORLD HERITAGE LIST

The Head-Smashed-In Buffalo Jump has been named to the World Heritage List by the UNESCO World Heritage Committee meeting in Australia. Located at the southern end of the Porcupine Hills, 19 km west of Fort Macleod, this site is the best-preserved and possibly the oldest buffalo jump in North America.

ELK TRANSPLANT PROGRAM

An Alberta Elk Transplant program has been initiated. At present there are about 18,000 elk in the Province. It is hoped to trap excess elk from herds which have become too large to be manageable and transport them to areas where elk once existed or where elk numbers are presently low. They will be trapped in southwestern Alberta and transported to several regions, including north of Calling Lake and to sites in the East Slopes.

ALBERTA BANDING IN 1979

The third Canadian Wildlife Service report to Canadian banders (CWS Progress Notes No. 125, 1981) covers 1979. Nineteen Alberta banders tied with Quebec for second highest number of banders (13 per cent total, each), after Ontarios 52 per cent. Alberta banders banded 9642 birds of 120 non-game species, and 20,329 birds of 19 game species. Highest number of non-game species banded were 1620 Double-crested Cormorants, 1255 Tree Swallows and 1182 Tennessee Warblers. Highest numbers of game species were 8506 Mallards, 4550 Common Pintails and 3079 Blue-winged Teal. A detailed table lists the numbers of each species banded in each province and territory in 1979.

- Submitted by M.K. McNicholl

DR. KAY BALL HONOURED BY EDMONTON BIRD CLUB

Dr. Kay Ball has been recognized by the Edmonton Bird Club by receiving the Edmonton Bird Club Annual Award for significant contributions to the ornithology of the Edmonton area. Dr. Ball served as field secretary of the Edmonton Bird Club for several years and is a very active member of the club. The award was presented at the Edmonton Bird Club Annual Banquet held January 16, 1982.

LOIS FENNA RECEIVES GOULDEN AWARD

Lois Fenna received the 7th Annual Loran L. Goulden Memorial Award for outstanding work on the natural history of Alberta. Dr. Fenna is recognized by this award for her efforts in educating naturalists of the future through her work at the Ministik Hills Field Study Centre near Edmonton. Her biography and an article by Dr. Fenna will be featured in the September issue of the Alberta Naturalist.

– Submitted by Martin K. McNicholl

ROSS LEIN RECEIVES AWARD

Congratulations are due to Dr. M. Ross Lein of the Department of Biology, University of Calgary. According to Ornithol. Newsletter No. 22 (June 1981), Ross received one of two Ernest P. Edwards Awards for best papers published in the Wilson Bulletin in 1980. His paper was on non-song vocalizations of the Ovenbird, based on research in New England. His work on warbler vocalizations continues in Alberta.

-Submitted by Martin K. McNicholl

ENVIRONMENTAL MONITORING SYMPOSIUM

The Alberta Society of Professional Biologists is pleased to announce a symposium entitled "Environmental Monitoring" to be held on 20 and 21 April 1982 at the Westin Hotel (formerly Edmonton Plaza) in Edmonton.

The symposium will examine the question of why environmental monitoring is required, examine the design basis of environmental monitoring, the results of existing environmental monitoring programs, and the value of biomonitoring programs. Eminent speakers from universities, government and private industry will be featured.

For further information, contact Don Thomson (Secretary), Alberta Society of Professional Biologists, P.O. Box 566, Edmonton, AB T5J 2K8 (phone 403-429-9110).

OVERHEARD. . .

"Those who mourn when the grizzlies retreat from another mountain seem to be vastly out-numbered by those who do not. If this were all there was to it, the mourners could accept their minority status. But the tremendous frustration they know is due to the obvious fact that most of the non-mourners know nothing of the situation, and the few that do have no knowledge with which to assess the worth of a grizzly. About the only satisfaction allowed the mourners is their ability to see where other cannot, which is a sad accomplishment when the sight is the unconcerned destruction of one of earth's most important creations."

by Yorke Edwards from "Rare and Vanishing Wildlife", reprinted by permission of The Canadian Publishers, McClelland and Stewart Ltd, Toronto

JUNIOR NATURALISTS' SECTION

BUFFALO

by Kay Malmberg
Mossleigh School, Gr. 8

Once roaming in teeming thousands, the buffalo was nearly destroyed by the end of the last century and is now only found in certain national parks, game preserves and zoos. Thousands of buffaloes, the roaring of these animals is somewhat like the grunting of pigs, buffalos all over the prairies. The roaring can be heard for miles.

White hunters used the Indian form of shooting the buffalo down one by one. Although the Indians used bows and arrows, the white man used high powered rifles that knocked the buffalo down instantly after being hit. Since no one was charging them or creating a fuss the buffalo remained in place letting the white man kill them undelayed. Before the enormous and wasteful killing, buffalo ranged from mid-Canada into Mexico throughout the United States from the Carolinas to Idaho. Today most of the remaining twenty thousand live in parks or other protected areas. Buffalo living in Custer State Park are in fact, increasing so fast that some must be killed from time to time to protect their feeding habitats and keep the herd under control of man.

By 1885 the buffalo was practically extinct, for no other animal had been more useful to man in so many ways. One biologist listed 87 uses apart from food.

Buffalo feed mostly on grass. They also eat a few other small plants, as well as low shrubs and twigs of willows.

Generally, they are peaceful animals except during premating or rutting rituals. During rutting, bulls will battle each other by butting heads. Usually one backs out rather quickly and neither is harmed very much. During mating season, July to mid-September, the herds move restlessly and "bull roarings" are heard for miles, day and night. Cows will produce one yellowish calf in May or June. The calves remain with their mothers for about three years. The bull that leads the herd helps the cows protect their young from enemies. Both parents care for the calves.

Buffalo mate when they are 3 years old, but do not become full-grown for another five years. In rare cases they may live to be 30 or even 40 years old. Because of their quick temper, it has been impossible to train them in captivity.

Some animal breedings have tried to develop a useful kind of domestic animal by crossing the buffalo with ordinary domestic cattle. The resulting cattaloes have been unsatisfactory.

Although the buffalo is still on the list of endangered species, through controlled reproduction and careful management, these beautiful animals survive as more than a symbol of a marvelous past.

LIONS

by Karen King
Mossleigh School, Gr. 6

The mountain lion is a large wild animal of the cat family. Mountain lions once lived throughout the forests of the U.S. and Canada. When the settlers moved in they drove the animals away. Mountain lions now live in the western states from eastern New Mexico and Wyoming to the Pacific Coast and in a few places in Louisiana and Florida. They are also found in Alberta and British Columbia and thoughout much of Mexico, Central America to the tip of South America.

Early settlers gave the animal the name of "cougar", or mountain lion. They thought it was a female lion. Other names for this animal are catamount and puma. Especially in the eastern states, it is known as "panther".

An adult mountain lion may be either gray, reddish brown or tawny. It's hairs are fawn-gray tipped with reddish brown or grayish. The throat, inside of the legs and the belly are white, and the tip of the tail is black. Some mountain lions are solid black. A full-grown animal may be 4-5 feet long or even more, not counting the heavy tail which is 2-3 feet long. The heaviest mountain lion on record weighed 227 pounds.

Mountain lions have from one to five cubs at a time, generally two years apart. The average number is three. The cubs weigh one pound when born. They are covered with fur, but they are blind. They are lighter in colour than their parents, and have large, brownish-black spots on their body and dark rings on their short tails. Adults care for their young until they are able to survive alone. Young lions need two years to develop enough skill in hunting to find their own food. They may live to ten to twelve years old.

The cry of the mountain lion is wild and terrifying. It sounds like a woman screaming in pain. The animal also has a soft whistle call.

The mountain lion usually hunts at night. It will travel many miles after game in a single night. It's chief prey is deer, with elk the second choice. Occasionally it kills a bighorn. In case of need it will feed on small mammals, even skunks and porcupines. The mountain lion keeps under cover while stalking its prey. Then suddenly the lion leaps out upon the animal, breaking its neck or dragging it down to the ground.

Ranchers regard mountain lions as pests. But the big cats seldom kill calves or other domestic animals. Biologists believe that the mountain lion should be controlled, not killed off, because these cats play an important part in the animal world. They feed mainly on old and diseased deer.

Mountain lions are not usually dangerous to man. They are actually timid toward man, and are less likely to attack him than other wild cats. According to Latin American legend, the mountain lion has a playful nature, and seems to want to make friends with man. It is said a child may safely sleep in the open where the puma is the only wild animal around.

SOLITUDE

by Archibald Lampman

How still it is here in the woods. The trees
Stand motionless, as if they did not dare
To stir, lest it should break the spell. The air
Hangs quiet as spaces in a marble frieze.
Even this little brook, that runs at ease,
Whispering and gurgling in its knotted bed,
Seems but to deepen, with its curling thread
Of sound, the shadowy sun-pierced silences.
Sometimes a hawk screams or a woodpecker
Startles the stillness from its fixed mood
With his loud careless tap. Sometimes I hear
The dreamy white-throat from some far-off tree
Pipe slowly on the listening solitude,
His five pure notes succeeding pensively.

From "Marked by the Wild", reprinted by permission of The Canadian Publishers, McClelland and Stewart Ltd., Toronto

THE ROCKY MOUNTAIN GOAT

by Jorden Morris, Grade 5

I my essay I have picked the Rocky Mountain Goat. This animal is not endangered but needs lots of room to survive in. In my essay I will explain the goats reproduction, habitat, a description and tell about the animal's habits.

The Rocky Mountain Goat is related to the antelope or is in kinship with it. The goat's colour is white throughout except for its nose, eyes, mouth and wide cloven hooves. I usually only shows streaks of brown when young. The goat has high shoulders and on the centre line of its back and shoulders, its hairs are long and stiff creating an abrupt ridge. The goat is able to withstand long, cold winters by its layers of soft, warm wool under the thick, long hair. Though its legs are thinly covered, it bothers the goat very little. The goat is equipped with a large beard under the chin. The Mountain Goat's ears are pointed with long, horns in the front which are about nine inches long.

The iris in the goats eyes are usually yellow with black pupils in the center of them.

The mating of Rocky Mountain Goats is usually in the near months of November. At this time the males, of "billies", have raging fights to win over sexual advantages. Usually one or two kids are born in the middle of spring following a gestation period of about twenty-four weeks. The young, called "kids", stay with the female, "nanny" for about a year and a half. In this period of time the kids learn everything a goat needs to know to survive in the mountains of Alberta and North America.

In instinct of the goat is very interesting. If a young kid is in danger from a predator it lies down almost automatically as if dead. Then the enemy walks over, the kid will leap away leaving the enemy dazed. This is not taught to the goat, so instinct takes over in this case.

The teaching of the young goat is very important to the life of the animal itself. To gain the youth's confidence, an old goat will lead on a steep path and the young will follow behind, with another old goat bringing up the rear. If the infant turns back a swift butt from the last goat puts it back on the track. This is very important to the goats in learning confidence in the high mountain regions.

The Rocky Mountain Goat uses his environment to great advantage. For instance, to clean the goat's coat it uses the weather. The wind combs his coat, the rain washes it and the sun dries it. The goat also uses the wind to blow the snow off the peaks so vegetation is exposed to eat and the goat doesn't have to dig for dinner. The goat's food consists of alpine grasses such as forbus, and most bark off trees. The goat is one of the few game species that will eat Buffalo Berries and Western Hemlock. Goats also use the alkaline earth licks, especially in the summer months.

The Rocky Mountain Goats usually separate when not in breeding periods. The nannies and kids stay at lower altitudes, and the billies climb very high. Mountain Goats walk the high trails with stiff legs and can jump ridges over ten feet long.

This concludes my essay on a very shy alpine creature, the Rocky Mountain Goat.

FEDERATION OF ALBERTA NATURALISTS

STANDING COMMITTEES

---

1. RESEARCH - Al Wiseley (Chairman) and Derek Johnson

2. WILDERNESS, PARKS AND NATURAL AREAS - Mike McIvor (Chairman), Don Stiles, Mike O'Shea, Myrna Pearman and Lloyd Lohr

3. PUBLICATIONS - John Powell (Chairman), Pat Clayton, Virginia Young *(ex offico)* and David M. Ealey *(ex offico)*

4. ENVIRONMENTAL EDUCATION - Mary Bailey (Chairman), Myrna Pearman, David M. Ealey and Doris Rhodes

5. ENDANGERED SPECIES - Lloyd Lohr, Fred Schutz (Chairman), Mike O'Shea and Derek Johnson

6. FINANCE COMMITTEE - David M. Ealey (Chairman), Charles Harper, Maryhelen Posey and Fred Coffey *(ex offico)*

7. PUBLICITY COMMITTEE - Dorothy Dickson (Chairman), Grace Neill, Diane McIvor, Harvey Gardner, Hazel Ross, Charles Harper, Peter DeMulder, Jean Burgess and Bill Nesbitt

8. BY-LAWS AND CONSTITUTION - Harvey Gardner (Chairman), Eric Tull and Dorothy Broadbent

9. PUBLIC ADVISORY COMMITTEE - Dorothy Broadbent, Representative, Bill Nesbitt, Alternate

10. LAND USE COMMITTEE - Maryhelen Posey (Chairman), Dorothy Broadbent, Fred Schutz and Mike McIvor

11. ALBERTA ECOLOGICAL SURVEY - John Powell, Representative, Charles D. Bird, Alternate

12. FISH AND WILDLIFE - John Powell, Representative, David Ealey, Alternate

13. CANADIAN NATURE FEDERATION - David Ealey, Representative

14. FEDERAL/PROVINCIAL WILDLIFE CONFERENCE - David Ealey, Delegate

15. ALBERTA ORNITHOLOGICAL RECORDS COMMITTEE - Ian Halladay (Chairman), Jim Salt, Peter Sherrington

16. LONG RANGE PLANNING AND POLICY COMMITTEE - Mary Lore (Chairman), Maryhelen Posey, Pay Clayton, John M. Powell, Mike McIvory, Dorothy Broadbent, David M. Ealey

ALBERTA NATURALIST

SPECIAL ISSUE NO. 1. July, 1981.

This book is dedicated to the memory of the late Helen C. Schuler, a founding officer of the Federation of Alberta Naturalists and is published to commemorate the tenth anniversary of the Federation. It is the history, written by the members, of both this organization and its Corporate Member Clubs. Some of these member clubs have been active since the turn of the Century, others are of a more recent inception, but the whole is fascinating reading and a must for any person interested in both the human and natural history of Alberta.

151 pages, 5½" x 8½". illustrated with black and white photgraphs.

Price: $6 plus $1 for postage.

To obtain copies contact your Corporate Club or write to the Federation of Alberta Naturalists, Box 1472, Edmonton, Alberta, T5J 2N5. Attention: Pat Clayton.

Edmonton Bird Club

FEDERATION OF ALBERTA NATURALISTS

SPECIAL ISSUE NO. 2

BIRD BANDING IN ALBERTA

TABLE OF CONTENTS

COVER: Young Great Horned Owl, by Edgar T. Jones

DEDICATION

AMATEURS' HOBBY → COVER STORY: Bird-Banding is hobby of Alberta housewife, by Kathleen Salt 1

PROVINCIAL OVERVIEW → BANDING IN ALBERTA: AN OVERVIEW, by Martin K. McNicholl 4

MEMORIAL → KEN TRANN, A BIOGRAPHY, by Ron Gallant 13

RENOWNED BANDER → EDGAR T. JONES: EDMONTON BIRD BANDER, by Martin K. McNicholl 20

HISTORICAL REPRINT → THE SCIENTIFIC ASPECTS OF BIRD-BANDING, by William Rowan 25

RESEARCH (HISTORICAL) → NOTES OF RECOVERIES OF BANDED FERRUGINOUS ROUGH-LEGGED HAWKS (*Buteo regalis*), by W. Ray Salt 33

RESEARCH (RECENT) → PRELIMINARY RESULTS OF MERLIN BANDING IN EDMONTON, ALBERTA, by Alan R. Smith 38

RESEARCH (RECENT) → RESULTS OF CALGARY AREA BANDING OF TREE SWALLOWS AND MOUNTAIN BLUEBIRDS, 1976 AND 1977, by Donald J. Stiles 40

RESEARCH (RECENT) → REPEAT SIGHTINGS OF SOME INDIVIDUALLY MARKED RING-BILLED GULLS AT CALGARY, ALBERTA, by D.V. Chip Weseloh 45

RESEARCH (RECENT) → NUMBERS OF BLACK-CAPPED CHICKADEES AT A PIGEON LAKE FIELD STATION, by Martin K. McNicholl 53

RAPTOR OVERVIEW → RAPTOR BANDING IN WESTERN CANADA, by Richard Fyfe and Ursula Banasch 57

RAPTOR MANAGEMENT → THE 1980 KANANASKIS COUNTRY PEREGRINE REINTRODUCTION PROJECT, by Allen N. Wiseley 62

RESEARCH (RECENT) → DETERMINATION OF SEX AND THE SEX RATIO IN A POPULATION OF AMERICAN DIPPERS IN SOUTHWESTERN ALBERTA, by David M. Ealey 66

++++

Copies are available for sale @ $3.00 plus 50¢ for postage. Members can purchase them through their elected directors of corporate member clubs or by writing to the Federation of Alberta Naturalists, Box 1472, Edmonton, T5J 2N5. Attn. D. Ealey.

Cosponsored by the Federation of Alberta Naturalists and the Edmonton Bird Club, for the American Ornithologists Union Conference held in Edmonton in August, 1981.

DOUBLE L SADDLERY & LEATHER SHOP

SALES ◇ SERVICE ◇ RENTALS

ON SPECIALIZED OUTDOOR AND CAMPING EQUIPMENT FOR THE

- X-COUNTRY SKIER
- BACKPACKER
- HIKER
- HORSEPACKER
- CANOEIST

Repairs on all kinds of equipment

10% discount on new equipment
to Naturalist Club Members

All products personally tested

LLOYD M. LOHR
BOX 1414
STETTLER, ALBERTA T0C 2L0

Phone (403) 742-3846

The Alberta Naturalist is published quarterly by the Federation of Alberta Naturalists. A research supplement is also published annually and special supplements may be published from time to time. Any material printed for the first time in the AN may be reproduced without permission; credit lines will be appreciated. All opinions expressed are those of the authors concerned, and do not represent official FAN policy except where stated.

DEADLINES for submission of material for regular issues are: January 15, April 15, July 15 and October 15. All maps and charts should be submitted on 8-1/2" x 11" (or 8-1/2" x 7") white bond. Please indicate in light pencil any data which are to be typed on charts, maps, etc. Black and white photographs, slides, or line drawings are welcomed. Include your complete mailing address.

DEADLINES for FAN project reports are: Alberta Flowering Dates, October 31, Dr. Charles E. Bird, Box 165, Mirror, AB (form included in this issue); Alberta Christmas Bird Counts, January 15, Virginia Young, R.R. #1, Busby, AB T0G 0H0; Species Count Day (May), Birds and Mammals, July 15, Al Wiseley, 202-635-56 Ave.SW, Calgary, AB T2V 0G9; Species Count Day (May), Plants, July 15, J. Derek Johnson, Northern Forest Research Centre, 5320 - 122 St., Edmonton, AB T6H 3S5; Prairie Nest Records Scheme, October 1, Herbert W.R. Copland, Manitoba Museum of Man and Nature, 190 Rupert Ave., Winnipeg, MN R3B 0N2.

FAN MEMBERSHIP FEES ARE: Regular, $10 per year; Supporting, $25.00 or more per year, with the excess over $10 being deductible from your taxable income.

Enclosed is $____ covering a ____-year Regular Membership

Enclosed is $____ covering a ____-year Supporting Membership

NAME_____

ADDRESS_____

_____

_____Postal Code_____

Send to: Federation of Alberta Naturalists
Box 1472
Edmonton, Alberta T5J 2N5

FLOWERING DATE OBSERVATIONS

This form is for those who live on a farm or acreage or who can record data for a particular location. Flowering is interpreted as meaning that sepals and /or petals are open. The compiler will be happy to answer questions or identify pressed specimens or photos. Deadline, end of October.

Species	First date in flower	Later dates	Last date
Prairie Crocus			
Aspen			
Early Blue Violet			
Golden Bean			
Saskatoon			
Star-flowered Solomon's-Seal			
Choke Cherry			
Yellow Pea Vine			
Northern Bedstraw			
Common Yarrow			
Western Wood Lily			
Brown-eyed Susan			

Dr. C.D. Bird
FAN Phenology Project Coordinator
Box 165, Mirror, AB T0B 3C0

		Lethbridge Area	Calgary Area	Red Deer Area	Stettler Area	Edmonton Area	Peace River Area
Prairie Crocus	1981	Ap4 +6	Mr8 +23	Mr22 +20	Mr28 +15		Ap4 +11
	Avg.	Ap10	Mr31	Ap11	Ap12(8)	Ap16(6)	Ap15(7)
Aspen	1981		Ap1 +2	Mr30 +26	Ap12 +6	Ap5 +10	My2 -3
	Avg.	Ap4 (1)	Ap3	Ap25	Ap18(7)	Ap15	Ap29(4)
Early Blue Violet	1981		Ap28 +1	Ap24 +12	Ap27 +3	My1 +3	My7 +2
	Avg.	My8(6)	Ap29	My6	Ap30(8)	My4	My9(6)
Golden Bean	1981	Ap4 +17	Ap25 +2	My9 0	My4 +1	My15 -4	
	Avg.	Ap21	Ap27	My9	My5(8)	My11(6)	My27(1)
Saskatoon	1981	My2 +6	My18 -6	My12 +5	My2 +11	My9 +5	My17 -5
	Avg.	My8	My10	My17	My13(8)	My14	My12(6)
Star-flwrd Solomon's Seal	1981	My12 +4	My18 -5	My20 +6	My20 +7	My19 +7	My21 +4
	Avg.	My16(8)	My13	My26	My27(8)	My26	My25(6)
Chokecherry	1981	My12 +9	My30 -8	My19 +8	My15 +7	My15 +6	My29 -10
	Avg.	My21	My22	My27	My22(8)	My21	My19(6)
Yellow Pea Vine	1981	My31 +3	My30 0	My5 +22	My23 +6	My3 +18	My29 +1
	Avg.	Jn3(4)	My30	My27(8)	My29(7)	My21	My30(6)
Northern Bedstraw	1981		My30 +6	My31 +15	Jn1 +8	My30 +11	My30 +12
	Avg.	Jn13(5)	Jn5	Jn15(8)	Jn9(8)	Jn10	Jn11(6)
Common Yarrow	1981	My30 0	Jn15 -10	Jn16 +2	Jn14 0	Jn10 +4	Jn4 0
	Avg.	My30	Jn5	Jn18(8)	Jn14(8)	Jn18	Jn14(6)
Western Wood Lily	1981		Jy4 -15	Jn17 +5	Jn16 +9	Jn22 +2	Jn11 +4
	Avg.		Jn19	Jn22(8)	Jn25(8)	Jn24(8)	Jn16(6)
Brown-eyed Susan	1981	My31 -2	Jn18 -3	Jy15 -15	Jn19 +5	Jy6 +1	Jy29 -15
	Avg.	My29(8)	Jn15	Jn30(8)	Jn24(8)	Jy7(8)	Jy14(4)

First flowering dates, 1981, for the 12 key species in the 6 best-reported areas. Avg. cover 9 years except where indicated by a lower number. Plus and minus figures indicate how much earlier/later 1981 date was from average date.

FEDERATION OF ALBERTA NATURALISTS

BOARD OF DIRECTORS

Past President:	Mary Lore, 1621-4th St. NW, Calgary, AB T2M 2Z1
President:	Maryhelen Posey, 5127 Brisbois Dr. NW, Calgary, AB T2M 2G3
Vice-President:	Dave M. Ealey, Box 1472, Edmonton, AB T5J 2N5
Recording Secr.:	Don Stiles, 20 Lake Wapta Rise SE, Calgary, AB T2J 3M9 [Interim]
Treasurer:	Fred Coffey, 11150-52 St., Edmonton, AB T3W 3H7
Correspond. Secr.:	Evangeline Case, Box 1472, Edmonton, AB T5J 2N5
Membership Secr.:	Eileen Coffey, 11150-52 St., Edmonton, AB T3W 3H7
Editor:	Virginia Young, R.R. #1, Busby, AB T0G 0H0
Asst. Editor:	Dave M. Ealey, Box 1472, Edmonton, AB T5J 2N5
Appointed Directors:	Derek Johnson, Lloyd Lohr, Myrna Pearman, John Powell
Elected Directors:	F. Schutz, Bill Nesbitt (Red Deer River Naturalists)
	A. Wiseley, M. McIvor (Bow Valley Naturalists)
	D. Dickson, D. Stiles (Calgary Field Naturalists' Society)
	M. Bailey (Lethbridge Naturalists' Society)
	T. Grafe, Grace Neill (Buffalo Lake Naturalists)
	D. Ealey (Edmonton Bird Club)
	P. Clayton, F. Coffey (Edmonton Natural History Club)
	M. Posey, H. Gardner (Alberta Speleological Society)
Patron:	Hon. Dr. J.W. Grant MacEwan
Honorary Members:	Professor W. Ray Salt
	Dr. J. Dewey Soper
	Dr. Kerry Wood
	Robert Lister

CORPORATE MEMBER CLUBS

Alberta Speleological Society, 2025-22 Ave. NW, Calgary AB T2M 1S1

Bow Valley Naturalists, Box 1693, Banff, AB T0C 0C0

Buffalo Lake Naturalists, Box 1414, Stettler, AB T0C 2L0

Calgary Field Naturalists' Society, Box 981, Calgary, AB T2P 2K4

Edmonton Bird Club, Box 4441, Edmonton, AB T5J 4T5

Edmonton Natural History Club, Box 1582, Edmonton, AB T5J 2K4

Lethbridge Naturalists' Society, c/o 2302-20 Ave. S., Lethbridge, AB T1K 1G5

Red Deer River Naturalists, Box 785, Red Deer, AB T4N 5H2

If undeliverable
return to:
FAN, Box 1472
Edmonton, Alberta
T5J 2N5

Return Postage
Guaranteed

Postage paid at Edmonton
Alberta Under Second
Class Mail Registration
Number 3604

O.F.G. Sitwell D
#1601 - 11135 - 83 Avenue 81
Edmonton, Alberta
T6G 2C6

A387794

FEDERATION OF ALBERTA NATURALISTS